TRADE
employment
and
adjustment

Charles Pearson and Gerry Salembier

This study attempts to untangle some of the strands that link international trade, the level and structure of domestic employment, and requirements for labour adjustment.

• ESSAYS IN INTERNATIONAL ECONOMICS •

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Charles Pearson

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The Institute for Research on Public Policy
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Foreword

In any discussion of trade policy, the most common argument against freer international trade centres on its impact on domestic employment. In Canada, with a relatively high proportion of trade comprising its economic activity, discussion of international economic policy has rarely taken account of this issue. In other countries, especially those such as the United States with smaller external sectors, the impact on labour of changes in trade policy has been the subject of even less analysis.

This study, another in the Institute's major program of work in international economics, attempts first to clarify the relationship between trade and employment in a theoretical but accessible fashion. The roles played by such factors as international competitiveness and comparative advantage, the social and private costs of adjusting to trade changes, and government assistance and protectionist policies are examined in this light. Existing literature on the topic is then briefly reviewed, and the focus turned to the question of who in society must bear the burden of adjustment-related shifts in employment.

The description and analysis that follow of Canadian and U.S. government assistance programs to trade-displaced workers is a useful guide to both academics and practitioners of internationa' trade policy. Recent radical changes in U.S. policy provide a contrast between the current Canadian and U.S. approaches to the question of government involvement in adjustment assistance.

The Institute is fortunate in having been able to draw on the knowledge and experience of Professor Charles Pearson of the Johns Hopkins University's School of Advanced International Studies who has prepared most of the study. He enthusiastically welcomed the efforts of the staff of the International Economics Program of the Institute in including Canadian material and perspective, and in

refining other parts of the manuscript. As a result, the study should provide a good introduction to an increasingly important problem and make an important contribution to trade policy development in both countries.

Gordon Robertson
President
March 1983

Avant-propos

Dans quelque discussion de la politique commerciale que ce soit, le principal argument contre la libéralisation du commerce international porte sur ses effets sur l'emploi au pays. Au Canada, dont le commerce constitue une part relativement importante de l'activité économique, la discussion de la politique économique internationale a rarement tenu compte de ce problème. Dans d'autres pays, et particulièrement dans des pays tels que les États-Unis qui ont un secteur extérieur plus petit, les répercussions des changements de la politique commerciale sur l'emploi ont suscité encore moins d'analyses.

Cette étude, qui s'inscrit dans le grand programme de recherche de l'Institut sur l'économie internationale, tente tout d'abord de mettre en lumière les rapports entre le commerce et l'emploi de manière théorique mais accessible. C'est ainsi que l'on examine les rôles de facteurs tels que la concurrence internationale et l'avantage comparatif, les coûts sociaux et privés de l'adaptation aux changements commerciaux, l'aide du gouvernement et les mesures protectionnistes. On recense ensuite brièvement les écrits sur le sujet avant de se demander qui dans la société doit supporter le fardeau des modifications de la situation de l'emploi découlant de l'adaptation.

La description et l'analyse qui suivent des programmes d'aide des gouvernements canadien et américain aux travailleurs déracinés par le commerce sont un guide utile tant pour les universitaires que pour les praticiens de la politique commerciale internationale. Les changements radicaux opérés récemment dans la politique américaine offrent un contraste entre les approches canadiennes et américaines actuelles de la question de la participation du gouvernement à l'aide à l'adaptation.

L'Institut est privilégié d'avoir pu profiter des connaissances et de l'expérience du professeur Charles Pearson de la School of Advanced International Studies de l'université Johns Hopkins, qui a préparé la plus grande partie de l'étude. Il a accueilli avec enthousiasme les efforts du personnel du programme sur l'économie internationale de l'Institut en vue d'inclure une perspective et du matériel canadiens, et de parfaire d'autres parties du manuscrit. Par conséquent, l'étude

devrait représenter une bonne introduction à un problème de plus en plus important et contribuer énormément à l'élaboration de la politique commerciale dans les deux pays.

Gordon Robertson
Président
Mars 1983

The Authors

Dr. **Charles Pearson** is professor of international economics at the School of Advanced International Studies, the Johns Hopkins University in Washington, D.C. He is a graduate of Middlebury College (B.A.), Johns Hopkins University (M.A.), and Cornell University (Ph.D.). Dr. Pearson has written and lectured extensively on international economics and international environmental issues. His publications include *Environment: North and South, An Economic Interpretation* (Wiley Interscience) and *Annals of Protection: The Case of Footwear* (Trade Policy Research Centre, London). Dr. Pearson's current research interests are trade relations between the United States, Japan, and the newly industrializing countries, and environmental protection in developing countries.

Gerry Salembier was educated at Carleton University, studying international economics and politics while working for the degree of Bachelor of Commerce in 1981. He is presently a member of the staff of the Institute's International Economics Program. His research activities include the analysis of non-tariff barriers to trade as well as labour-market adjustment policies and industrial restructuring.

Summary

Trade liberalization carries with it not only benefits in the form of gains from trade but also costs arising from resource adjustment. While the benefits from freer trade are of a long-run nature and accrue to the economy as a whole, the costs are incurred in the short term by individuals as well as by society. Adjustment required of the labour force in particular is all the more visible in a period of high unemployment, slow growth, and strong import competition such as both Canada and the United States have experienced in the late 1970s and early 1980s.

The first chapter of this study sets out and clarifies a number of key issues and concepts in the relationship between trade and employment. The distinction between changes in comparative advantage and changes in international competitive position is critical in determining the cause of import surges and, hence, the appropriate policy response. The interrelationship of macro-economic policy and adjustment at the micro level is examined with a view to establishing the requirements for a coherent set of adjustment measures. Differences between social and private costs of adjustment, both conceptual and empirical, are emphasized and the effect of freer trade on each is analysed. The link between these costs and political pressures for protectionism is seen frequently in Canada and the United States; differences between the two countries in this respect provide an interesting focus for discussion.

The political economy of protectionism is further explored in Chapter 2 of the study. Trade adjustment assistance programs on the one hand, and temporary protection on the other, are compared from the perspectives of equity and economic efficiency. Given the fundamental problem of adjusting resource allocation in the face of trade changes, these two basic policy options can have widely varying economic and political effects. Viewing the two policies in a political context as methods of "buying" a more liberal trade policy gives rise to a number of interesting questions, particularly in a Canadian-U.S. comparative context.

The effectiveness of protection as a method of maintaining or of increasing employment, either nationally or within a given industry, is limited for several reasons, some of them quite subtle. The instrument of protection employed, such as tariffs, quotas, or subsidies, also influences the employment and price effects in the domestic economy. Chapter 2 concludes with a discussion of the effect of trade on the structure of employment, the emphasis being on unskilled labour surplus and employment in "more desirable" manufacturing industries.

Empirical research on the magnitude and the costs of adjusting to trade change may be grouped into three categories: trade-employment balance studies, decomposition studies, and labour-tracking studies. Chapter 3 evaluates the validity of each approach for dealing with the issue of adjustment costs and reviews several major contributions of each type. The labour-tracking studies are most promising from the point of view of trade policy development, as they permit a direct estimation of adjustment costs actually incurred as a result of changes in employment patterns. Work by Glenn Jenkins on Canadian worker adjustment and by Walter Corson on such adjustment in the United States is especially relevant in this regard.

A major policy concern involves the effect of trade changes on specific groups of workers. Chapter 4 analyses occupational and industrial characteristics of displaced workers, drawing evidence from various studies. Implications for the design of adjustment assistance programs are summarized. A description and analysis of Canadian and U.S. adjustment assistance programs conclude the study. The contrast between the two countries' programs and their effectiveness in political and economic terms point up important lessons for policy makers on both sides of the border.

Abrégé

La libéralisation des échanges entraîne non seulement des avantages sous forme de bénéfices commerciaux mais aussi des coûts provenant du réaménagement des ressources. Tandis que les avantages d'une libéralisation sont de longue durée et profitent à l'économie tout entière, les coûts sont encourus à court terme par les particuliers ainsi que par la société. Plus particulièrement, l'adaptation exigée de la population active est d'autant plus évidente dans une période de chômage élevé, de croissance lente et de forte concurrence des importations telle que le Canada et les États-Unis ont connue à la fin des années 1970 et au début des années 1980.

Le premier chapitre de cette étude identifie et élucide un certain nombre de questions et de concepts clés dans les rapports entre le commerce et l'emploi. La distinction entre les changements survenus dans l'avantage comparatif et dans la situation de concurrence internationale est critique lorsqu'il s'agit de définir la cause des rebondissements des importations et, partant, d'établir la réaction politique à adopter. On examine les rapports réciproques entre la politique macroéconomique et l'adaptation au niveau microéconomique en vue de déterminer les critères d'un ensemble cohérent de mesures d'adaptation. On insiste sur les différences entre les coûts sociaux et les coûts privés de l'adaptation, tant conceptuels qu'empiriques, et l'on analyse les effets d'une libéralisation du commerce sur chacun. Au Canada et aux États-Unis, on observe souvent un lien entre ces coûts et les pressions politiques en faveur du protectionnisme; les différences entre les deux pays à ce chapitre offrent un intéressant sujet de discussion.

Au chapitre 2, on fouille davantage l'économie politique du protectionnisme. Les programmes d'aide à l'adaptation au commerce, d'une part, et la protection temporaire, d'autre part, sont comparés en fonction de l'équité et de l'efficience économique. Étant donné le problème fondamental que constitue le réaménagement de l'affectation des ressources face aux changements commerciaux, ces deux options politiques fondamentales peuvent engendrer des effets économiques et politiques fort divergents. Le fait de considérer les deux

politiques dans un contexte politique en tant que méthodes « d'acheter » une politique commerciale plus libérale soulève une série de questions intéressantes, en particulier dans un contexte comparatif canado-américain.

L'efficacité de la protection comme outil de préservation ou d'augmentation de l'emploi, soit à l'échelle nationale, soit dans une industrie donnée, est limitée pour plusieurs raisons dont certaines sont fort subtiles. L'instrument de protection utilisé, tel que les tarifs, les quotas ou les subventions, influence également les effets de l'emploi et des prix dans l'économie intérieure. Le chapitre 2 se termine par une discussion de l'effet du commerce sur la structure de l'emploi, et en particulier sur les surplus de main-d'oeuvre non qualifiée et sur l'emploi dans les industries manufacturières « plus désirables ».

On peut ranger en trois catégories la recherche empirique sur l'ampleur et les coûts de l'adaptation aux changements commerciaux : les études sur l'équilibre entre les échanges et l'emploi, les études de décomposition et les études de répartition de l'emploi. Le chapitre 3 détermine la valeur de chaque approche face à la question des coûts d'adaptation et recense plusieurs contributions importantes de chaque type. Les études de répartition de l'emploi promettent surtout du point de vue de l'élaboration de la politique commerciale, puisqu'elles permettent une évaluation directe des coûts d'adaptation réellement encourus suite aux changements des profils de l'emploi. Le travail de Glenn Jenkins sur l'adaptation du travailleur canadien et de Walter Corson sur l'adaptation du travailleur américain est particulièrement pertinent à ce point de vue.

En matière de politique, on se préoccupe beaucoup de l'effet des changements commerciaux sur certains groupes particuliers de travailleurs. On présente au chapitre 4 une analyse, établie à même des données provenant de plusieurs sources, des caractéristiques professionnelles et industrielles des travailleurs déracinés. On y résume les implications pour la conception des programmes d'aide à l'adaptation. L'étude se termine par une description et une analyse des programmes d'aide à l'adaptation au Canada et aux États-Unis. Le contraste entre les programmes des deux pays et leur efficacité en termes politiques et économiques s'avère fort instructif pour les décideurs des deux pays.

Introduction*

Economic circumstances during the past several years have encouraged closer examination of the relationship between international trade, the level and structure of domestic employment, and requirements for labour adjustment. These circumstances include skilled labour shortages in the midst of high levels of domestic unemployment, large trade imbalances among OECD countries and *vis-à-vis* OPEC, internal domestic economic imbalances, and strong competition in manufactures from the newly industrialized countries (NICs).

The current direction of trade policy is unclear. On the one hand, successful conclusion of the Multilateral Trade Negotiations (MTN) will result in further reductions in tariff barriers that are already low by historic standards. More importantly, the MTN produced a framework for regulating and reducing non-tariff trade barriers (NTBs). This is a significant accomplishment in view of the turbulent international economic conditions of the 1970s. On the other hand, there is disturbing evidence of a "new protectionism," directed in part toward developing countries.

In Canada, the global import quotas followed by negotiated bilateral export restraints on textiles and clothing, and two sets of global quotas on footwear reflect this "new protectionist" trend. Recent examples of increased trade protection in the United States include escape clause actions on televisions, cookware, and other products, the so-called voluntary export restraints on Japanese automobiles and, arguably, the negotiated voluntary restraint on European Community (EC) steel exports. Strong pressure in Congress for reciprocity and domestic content legislation is also troubling. Moreover, the MTN failed to reach agreement on the contentious and important issue of safeguards.

* We wish to thank F.J. Chambers, Robert Joyce, Andrew R. Moroz, James Riedel, Walter S. Salant, and Wendy Takacs for helpful comments on an earlier draft. They, of course, are not responsible for any remaining errors or ambiguities. The material presented here, especially Chapter 3, is also analysed in Dr. Pearson's 1980 study for UNCTAD, which emphasized adjustment to developing country exports of manufactures. Martin Wolf's study on adjustment (1979) has been a valuable reference.

Finally, it is not clear whether "industrial strategy" and policies for "reindustrialization" will involve protection of declining industries.

Trends in adjustment policies are also mixed. The growth in insured loan assistance in Canada, which began with the mid-1960s' inception of the Automotive Adjustment Assistance (AAA) and later the General Adjustment Assistance Program (GAAP), tailed off in the early 1970s, especially in the newly protected textile and clothing sectors. Towards the latter half of the decade, however, loan insurance and other payments under GAAP and other more general adjustment programs accelerated quickly, and in more recent years, sectoral adjustment strategies appear to have increased in importance. In the United States, major changes were made in the trade adjustment assistance program following the 1974 trade legislation, including liberalization of eligibility criteria and benefits. As a result, the number of workers certified and the amount of benefits paid increased dramatically. In 1981 there was another major revision in the program sharply reducing worker benefits. Trade adjustment assistance is still viewed with suspicion by labour and critically by other observers, and has not eliminated use of the escape clause or defused protectionist pressure.

Discussion of the problems of adjusting to changes in trade usually centres around those changes brought about as a result of shifts in trade policy, such as tariff reductions or the removal of quotas. Trade adjustment assistance programs in various countries continue to focus to some extent on trade policy as the source of adjustment requirements. However, in actual fact autonomous trade changes, unrelated to tariff reductions or other policy actions, are responsible for the majority of variations in international trading conditions. The terms and volume of world trade are for the most part much more sensitive to changes in costs, technology, resource endowments, and tastes than to tariffs and quotas.

Despite the fact that the economic basis for trade lies not in the level of employment but in the mutual benefits received from more efficient allocation of resources, employment considerations have always played a large role in trade policy. Both trade liberals and protectionists debate trade policy in terms of jobs lost and gained. The debate is likely to continue and intensify over the next decade in view of the increased trade interdependence, rapid shifts in competitive position and comparative advantage, and slower economic growth. At the same time, the role of trade adjustment assistance in creating and conserving jobs in specific sectors will likely acquire increasing political significance. The question of the desired composition of industrial output and employment represents, in some countries, an important aspect of the trade policy debate. In short, the relationship among trade, employment, and adjustment will remain a major issue of public policy.

The relationship between trade and employment is often misunderstood. For example, a recent poll showed that seven out of ten Americans favoured job protection over cheap imports.[1] But the question was framed in a misleading way: "Which do you think is more important — to protect workers' jobs at the cost of higher prices for some products, or to be able to buy foreign goods at lower prices at the cost of some unemployment in this country?" Full employment is consistent with both liberal and protectionist trade policy. The more relevant questions are whether society is willing to protect jobs in certain industries at the cost of jobs lost in other sectors (and pay higher import prices), and how to minimize the social costs of adjusting to changes in trade.

Economists have long recognized that changes in trade patterns create adjustment costs. Ricardo devotes Chapter 19 of his *Principles* to a discussion of the costs and appropriate policy response to "sudden changes in the channels of trade."[2] Nevertheless, most textbook trade theory assumes that resources within an economy can move quickly and without cost among industries in response to trade change. As a result, trade economists frequently emphasize the long-run benefits of liberal trade without considering short-run adjustment costs. Trade policy practitioners, however, are reminded daily of adjustment costs. Recent theoretical work acknowledges that capital cannot immediately move among sectors of the economy, and that labour markets operate imperfectly. As a result, there are social and private costs of adjustment to trade change reflected by transitional unemployment of resources.[3] The policy issues then are the optimal rate of adjustment and the role of government in facilitating adjustment.

A large number of diverse empirical studies have attempted to relate trade, employment, and adjustment costs, but the studies suffer from a variety of problems. The studies do not reach a consensus as to what are the employment consequences of trade.[4] The best empirical work on trade and employment has been prompted by prospective trade liberalization under the MTN, with the general conclusion that employment effects will be modest. However, since autonomous trade change is generally more important than trade change due to tariff liberalization, the estimates of labour adjustment requirements remain incomplete. Increased competition in manufactures by developing countries has also stimulated empirical research, but the underlying concept in much of that research of a net employment balance resulting from trade with a subset of trade partners has a neo-mercantilist quality to it.

One area that needs clarification is the distinction — and the interrelation — between changes in comparative advantage and changes in general international competitive position as causes of trade and employment change. The former implies a change in the

competitive position of one industry, relative to other domestic industries and relative to the same industry in foreign countries. The latter implies a change in the competitive position of the home economy relative to other economies. Both sources of trade change can lead to increased imports and loss of domestic jobs, but the appropriate policy responses are very different.

Adjustment costs themselves require clarification. A clear distinction should be made between private costs borne by individuals and groups in society, and social costs borne by society as a whole. Social costs are, for the most part, more relevant for questions of efficiency, and private costs are more relevant for questions of equity and for understanding the political pressures of protectionism.

The appropriate policy response to increased imports and labour adjustment costs needs examination. Indeed, the nature and scope of the role of government in the adjustment process is itself at issue. The policy choice between temporary trade restrictions and adjustment assistance is confused because both approaches are often justified on similar grounds — to make resources competitive again, and to remedy injury caused by increased imports. But protection and adjustment assistance operate through quite different mechanisms and have quite different economic effects. Moreover, Canadian and U.S. adjustment assistance programs seem to suffer from an internal confusion between their purpose of promoting adjustment and their purpose of assisting resources, mainly labour, that have been injured from increased imports. Thus they may promote inconsistent objectives — assistance and adjustment.

This study attempts to untangle some of the strands that link trade, employment, and adjustment. The major conceptual issues are first clarified. These include the distinction between change in comparative advantage and change in competitive position, *macro-economic* versus *micro-economic* perspectives, the nature of adjustment costs, and appropriate policy responses. The various empirical approaches to the adjustment question are critically examined. The issue of who actually bears the burden of adjustment is addressed, and the major Canadian and U.S. policy initiatives in the area of trade adjustment assistance are reviewed.

Notes

[1] Clyde Farnsworth, "Poll Finds Protectionist Trend," *New York Times* (27 June 1980), p. D1.

[2] Ricardo (1911). Ricardo has a sophisticated discussion of adjustment costs, especially to the owners of capital. He notes that adjustment to trade is similar to adjustment to technological change. In both cases the economic value of industry-specific capital can be bid down, creating private, but not social, costs. He suggests that in the event of a war that interrupts grain imports, it may be desirable for government to announce a temporary duty to extend beyond the hostilities to protect domestic agriculture, in order to encourage the appropriate investment in agriculture during the hostilities.

[3] See, for example, Bhagwati, 1982.

[4] U.S. Congress, House Ways and Means Committee, Subcommittee on Trade, "The Impact of International Trade on U.S. Employment: A Survey of Literature," (Washington, D.C.: Government Printing Office, 1977).

Concepts and Issues 1

Comparative Advantage and International Competitive Position

The concepts of comparative advantage and international competitive position are somewhat elusive and highly interrelated. Yet, to analyse the problem of adjustment, clear working definitions of both are required.

Comparative advantage refers to the ability of one economy to produce a given good more efficiently — that is, at a lower opportunity cost — than a second economy. This ability is derived from the relative economic endowment of resources, technology, and economic structures in the two countries. Comparative advantage, therefore, involves a double comparison of cost and price relations. It is the comparison of the structure of costs *among* various domestic products *as compared to* the structure of costs of these products in other countries. At a point in time, all countries have a comparative advantage in one set of products and a comparative disadvantage in another set of products. It follows that comparative advantage refers to specific products as opposed to all the products produced by an economy.

International competitive position, on the other hand, can refer to an individual industry or to an economy as a whole. It involves the single comparison of nominal costs and prices between two producers (economies) of the same product (set of products) offered to a given market. Whereas a tariff on a particular product does not alter a country's natural comparative advantage, it does improve the competitive position of the protected industry in its own domestic market. This is done by putting foreign producers selling to that market at a competitive disadvantage. Similarly, an economy's overall competitive position will be affected by the nominal level of prices and wages, the exchange rate and other macro-economic factors relative to those in other countries.

In this context, two seemingly simple but critical questions arise: do increased imports displace domestic jobs and create adjustment costs for workers, and, if so, what is the appropriate policy response? To

answer these questions, it is useful to distinguish between a general increase in imports and an increase in imports of particular goods. The first may, but need not necessarily, involve a loss of international competitiveness for the economy as a whole; the second suggests a shift in the pattern or composition of trade. The change in the composition of trade may be the result of changing comparative advantage or decreasing competitiveness in a particular industry. The policy implications are quite different.

A *general* increase in imports can occur for one of two reasons — increased domestic demand during an economic upswing spills over into demand for imports, or demand *switches* away from domestic producers towards imports, for example, because of a general rise in costs and prices in the home economy relative to those abroad. The first reflects growth in domestic income, and the second reflects an erosion of international competitive position (Salant, 1978).

A general increase in imports due to an economic upswing does not displace domestic jobs. Domestic output, employment, and imports are all growing. Only in the sense that domestic output and employment might have grown more rapidly had imports grown more slowly can imports be said to affect domestic employment. In any event, the increased imports do not displace existing production and jobs, and do not create adjustment costs for labour.

In contrast, if the general level of costs and prices in the home economy moves out of line with those of other countries, demand will switch from home production to increased imports (and exports will languish). In that event, imports may displace some existing domestic production, workers may be laid off, and there will be adjustment costs before the workers are re-employed.

In short, a general increase in imports is consistent with either increasing or decreasing domestic employment, depending on whether the cause is expansion of domestic demand, or a loss of international competitive position. The same conclusion holds true when examining the trade balance. A reduction in the trade surplus (increase in the trade deficit) may be the result of domestic demand growth operating on imports and exports, or the result of a loss in international competitive position and a switching of domestic demand towards imports and foreign demand away from the home country's exports. The first case does not involve employment loss or labour adjustment costs, but the second one does.

As distinct from a *general* increase in imports, imports of *particular* goods can increase due to two types of factors: policy changes such as the reduction of tariff barriers or increases in foreign subsidies to the foreign producer; and autonomous changes such as a change in taste in favour of the imported article (which implies product differentiation), wage and price increases in the domestic industry that are not general

throughout the economy, or a change in comparative advantage. Trade changes due to these factors create a somewhat different type of adjustment problem than a general increase in imports and require different policies. Of the various factors leading to higher imports of a particular product, a change in comparative advantage is perhaps least obvious.

One reason that the concept of comparative advantage is a bit elusive is that an overvalued exchange rate, or an exchange rate dominated by capital inflows, can make a country uncompetitive in the products in which it has a comparative advantage — in other words it can "conceal" that comparative advantage. The Canadian dollar, a currency which arguably exhibits both of the above characteristics, is thought to have played this role in the Canadian economy over much of the last decade (James Frank, 1977). The exchange rate sets the general level of competitiveness of the economy *vis-à-vis* other economies, but does not determine the country's comparative advantage. Another reason for this elusiveness is that not all changes in relative costs among products in one economy are due to change in comparative advantage. For example, costs and prices in industry 'A' could rise due to wage increases granted to a strong union. Industry 'A' would suffer a loss of international competitive position, and imports of the product 'A' would increase and lay-offs might result, but the underlying structure of comparative advantage would remain unchanged.

A change in comparative advantage, if sufficiently large, may, furthermore, affect the general level of international competitiveness of the economy as reflected in the trade balance. If adjustment at the micro level is too slow or inadequate, such a change may require an exchange-rate adjustment to restore competitive position.

The employment implications of increased imports of particular products are straightforward. Individual export- and import-competing industries that find themselves less competitive due to a reduction in trade barriers, foreign subsidies, change in industry costs, or change in comparative advantage will stagnate or decline. If total market growth for the product is slow, and if the rate of decline of domestic output exceeds normal rates of labour attrition (voluntary quits, retirement), then involuntary separations or lay-offs occur. A number of policy issues arise including the nature and extent of labour adjustment costs (as workers released from one sector are not immediately re-employed elsewhere in the economy), and whether to resist the import increase through trade restrictions.

Table 1 summarizes the argument thus far.

Table 1

Reason for Import Increase	Domestic Output and Employment	Nature of Adjustment Problem
General Increase in Imports:		
Increased Aggregate Demand	Increasing	No Labour Adjustment Needed
Demand Switching	Possibly Decreasing	Restore Competitive Position
Increase of Particular Imports:		
Change in Comparative Advantage	Stagnant or Declining	Possible Lay-offs
Other Reasons	Stagnant or Declining	Possible Lay-offs

Two conclusions follow. First, neither a general increase in imports nor a deterioration in the trade balance provides prima facie evidence of employment loss and labour adjustment costs. Either phenomenon could result from greater economic growth relative to major trading partners, which certainly does not imply a decrease in employment.

The second conclusion is that trade measures to protect individual (import-competing) industries are not a correct response to a general loss in international competitive position. Rather, the most direct and appropriate response is a restoration of competitive position through macro-economic policies — fiscal and monetary policies to curtail cost and price increases, and/or an exchange-rate change to restore international competitiveness.

From a policy viewpoint, correct identification of the reason for increased imports is important. If the cause of labour displacement is a (permanent) loss of comparative advantage, the problem is to shift displaced labour into new sectors. If, instead, the cause is an overall loss of competitiveness leading to demand switching, macro-economic tools should be employed to restore competitiveness enabling displaced workers to return to their original employment. If the increased imports and resulting unemployment are due to foreign subsidies or dumping, national legislation providing for anti-dumping and countervailing duties is available to maintain existing patterns of employment.

There is a practical policy problem however. The loss of international competitive position, which does not imply moving workers from one sector to another and which requires macro-economic measures, is difficult to distinguish, when looking at the industry level, from a loss in comparative advantage, which does mean moving resources to other industries, and which requires micro-economic policies. At the industry level, with imports increasing and domestic employment declining, firms and workers request import relief through whatever channels are available. From their perspective, it is immaterial whether jobs are being lost to imports because of changes in general competitive position or comparative advantage. Too fre-

quently the origin of the problem is not correctly identified, and the response to an eroding competitive position for the economy as a whole is to shore up individual industries through export subsidies and import protection. Both of these policies can lead to misallocation of resources, reducing productivity growth in the economy. Trade restrictions push up the prices of imports and import-competing goods, contributing to inflation. These effects cause further worsening of the already poor competitive position of the economy.

It is similarly questionable whether trade adjustment assistance, which is designed to cope with tariff reductions and shifts in comparative advantage, is desirable and effective in cases where the dominant cause of employment loss is erosion of international competitive position. Yet neither the criteria for granting adjustment assistance under the various Canadian programs, nor their equivalents under U.S. trade legislation, make the distinction between changes in comparative advantage and competitive position. The U.S. law simply says that workers will qualify for benefits if an increase in imports is a substantial cause of decline in domestic production and sales, and thus contributes to the workers' unemployment. Criteria for Canadian programs generally make reference only to such broad considerations as the viability and need of a firm and its projects, or the "designated" status of a particular sector within a given community as assigned by Cabinet.

Macro- versus Micro-economic Perspectives

The distinction between competitive position and comparative advantage parallels a distinction between macro-economic and micro-economic perspectives on the relation of trade and employment. Obtaining equilibrium in the balance of payments and securing full employment are primarily macro-economic issues. The trade balance has an impact on the level of employment through its contribution to aggregate demand, but it is the level of the trade balance, not the composition of trade, that is important. And it is macro-economic policies — fiscal, monetary, and exchange rate — working directly on the economy, or indirectly through the trade balance, that determine the level of employment.

Comparative advantage determines the direction and pattern of trade, and hence affects the structure of employment as among sectors. It therefore raises micro-economic, or industry-specific, issues. While industry-specific trade policies, such as the structure of tariffs and export subsidies, help determine the allocation of resources and employment among sectors, they do not determine the overall level of employment.

Thus the notion of "adjusting to trade change" really embraces two types of adjustment — macro-economic adjustment of the level of trade

and employment, and micro-economic adjustment to changes in the pattern of trade. This paper is mainly concerned with the latter type of adjustment. But there are important links between the macro- and micro-economic perspectives that should be acknowledged at the outset.

First, as described above, it is difficult to distinguish at the industry level between loss of comparative advantage and loss of competitive position, and inappropriate policies may result from failure to make the distinction correctly. Secondly, if the micro-economic adjustment process is working poorly — resources are relatively immobile among industries or factor prices are rigid downward — the macro-economic objectives of trade balance equilibrium and full employment are more difficult to achieve. In particular, the trade balance is sluggish in responding to currency changes and aggregate demand policies will fail to achieve non-inflationary full employment. If micro-economic adjustment is resisted for any reason, including but not confined to protectionist measures such as tariffs and quotas, macro-economic objectives of price stability and productivity growth are more difficult to achieve. For example, the use of quantitative restrictions on selected imported goods reduces the influence of exchange-rate changes. Thus the burden of adjustment to a trade imbalance through currency depreciation is thrown on a smaller number of sectors, and macro adjustment is less efficient.

Thirdly, and most important, the micro-economic costs of adjustment to changes in comparative advantage are larger, and resistance to adjustment is greater, if the macro-economic situation exhibits high unemployment and slow growth. Workers are rational. They will resist adjustment and request protection more vigorously when other jobs are not readily available. Takacs (1981) has shown that the number of U.S. escape clause filings is positively correlated with the unemployment rate. Jenkins *et al.* (1978) have shown for Canada that labour adjustment costs are lower in periods of full employment. In short, the costs of adjustment at the industry level and the willingness to accept adjustment both depend, in part, on the macro-economic context.

In other words, macro- and micro-economic adjustment, although conceptually distinct, can become locked in a vicious circle. An unfavourable macro-economic climate increases adjustment costs and strengthens protectionist pressure at the micro level. Failure to make the micro adjustment, however, worsens the macro-economic situation. Put more positively, measures to facilitate resource movement and reduce adjustment costs at the micro level improve macro-economic performance, and, in turn, successful macro-economic performance is supportive of micro-economic adjustment.

These are not purely abstract considerations. Since the mid-1960s, the industrialized economies have faced strong pressures for micro-

economic adjustments. The pressures have emanated from developments in the global economy such as the emergence of a highly integrated Western trading system and the international transfer of technology. The oil crises of 1973 and of 1979/1980 confronted nearly all of the OECD countries with exceptionally severe macro- and micro-economic adjustment problems. At the macro level, economic growth has slowed, productivity growth has declined, trade imbalances have multiplied, unemployment rates are historically high, and inflation is pervasive. Adjustment at the micro level has been unimpressive, mainly because governments, responding to private-sector pressures, have resisted these forces of adjustment and change. In some cases direct trade barriers have been imposed to counter adjustment forces. These have often involved quantitative restrictions, outside the GATT framework, and have often been discriminatory in nature. In other cases, particularly in Europe, so-called structural adjustment policies have become *de facto* defensive policies, designed to resist rather than encourage factor mobility. The irony is that resisting adjustment at the industry level slows productivity and economic growth and is inflationary. This decreases the capacity to adjust in the future, and increases subsequent adjustment costs. Moreover, unfavourable macro-economic prospects for the 1980s, including slow growth and high unemployment levels, make adjustment to changing comparative advantage an especially difficult contemporary issue.

Adjustment Costs

What exactly are the economic costs of adjusting to changes in comparative advantage, and how should they be measured? Traditional international trade theory is not especially helpful. The usual textbook presentation assumes full employment, perfect mobility of resources (labour and capital) among domestic industries, and equilibrium exchange rates.[1] In this fashion adjustment itself becomes automatic, instantaneous, and costless. The only cost identified in the traditional comparative static trade analysis is the loss of economic efficiency and social welfare involved in *not* adjusting to shifts in comparative advantage. In other words, the cost of long-term misallocation of resources is dealt with, but the transitional cost involved in the process of re-allocating resources is ignored.

The traditional presentation does recognize that not everyone gains from freer trade. Specifically, owners of scarce productive factors — labour in a capital-abundant country — find their price in factor markets is bid down, and they may be made worse off. In that sense, some domestic groups may suffer economic losses from a freeing of trade (Stolper and Samuelson, 1941). On the basis of narrow self-interest, it is rational for these groups to seek protection even at the

expense of the general welfare. From this, one can build a theory explaining protectionist pressure (Brock and Magee, 1978).

As a practical matter, however, resource adjustment is not automatic and instantaneous. Workers released from declining industries are not immediately re-employed elsewhere in the economy. Plant equipment and skills are not easily transferred to other types of production. Thus, not only are there long-term costs to the economy involved in not adjusting, but the process of adjustment itself also involves real costs to workers, owners of capital, and to the economy as a whole. Theories of protectionist pressure should also account for these costs.[2]

The sources of transitional adjustment costs are imperfect mobility of resources, the most extreme case being human and/or physical capital that is specific to one industry or firm. It is necessary at this point to distinguish between social and private adjustment costs. By social adjustment costs we mean the costs borne by society as a whole during the adjustment period. By private adjustment costs we mean the net cost, after adjusting for transfer payments, borne directly by the displaced resources during the adjustment period.

Social adjustment costs are due to the loss of output to the economy when resources are made temporarily unemployed due to a change in the pattern of trade. They can be defined as either the value of output or income forgone when resources are made temporarily unemployed and are typically measured by wages forgone while workers are unemployed. The underlying premise is that wages reflect the value of labour's output, and thus lost wages measure the value of lost output. This may be an acceptable measure, but it is not perfect. It would be preferable to adjust for the value of additional leisure (if any) while unemployed. Also, when the trade-displaced worker finds alternative employment, he may "bump" the unemployment to others in the job market. Measures of social adjustment costs should include the direct and indirect unemployment effects. Finally, the wage rate prior to the lay-offs may overstate the social cost, as the correct measure is the value of unemployed labour in the next best alternative occupation.

Should lower wages in subsequent employment be part of social costs? It would appear not, as the subsequent wage reduction reflects the write-down of the value of human capital that was specific to the initial job, but which, due to trade change, has now lost some of its economic value. As noted below, however, lower wages in subsequent employment are part of workers' total private costs.

A similar argument applies to losses suffered by the owners of plant and equipment. Trade change can reduce the market value of the capital — indeed, make it without value and idle if it cannot be transferred to other industries. But this is a private cost and does not represent a social cost. Physical capital that is made obsolete or

uneconomic to operate because of trade change has lost its economic value. The fact that it is idle does not constitute a social cost. Nevertheless, some capital (e.g., trucks) can be used in many activities. There may be a period of temporary unemployment for this capital, and the value of its services lost during unemployment does represent a social cost.

Adjustment costs can be viewed from another perspective. One might argue that workers could, if they wish, bid down their wages to meet import competition and maintain their employment. If they do not, then unemployment can be regarded as voluntary, and presumably workers rationally expect the costs of unemployment to be less than the (discounted) difference between the two income streams — accepting temporary unemployment with subsequent re-employment versus maintaining their initial employment at depressed wages. In this event, the concept of social adjustment cost loses considerable force. But the existence of transfer payments (unemployment payments) affects workers' decisions and it is not clear that social adjustment costs disappear entirely. Also, workers may anticipate receiving trade protection and this influences their wage demands.

It is more fruitful to recognize that labour markets are not perfect — for example, medium-term labour contracts for worker groups may preclude individual wage negotiations and downward wage adjustment. In this case, the focus is properly shifted to viewing the social cost of adjusting to trade as a reflection of distortions in the labour market.

Another bothersome problem in the concept of social adjustment cost is the length of unemployment, which is presumably influenced by the wage at which the unemployed trade-displaced worker is willing to work. The troubling conclusion is that measured social adjustment costs are determined in part by workers' willingness to accept other employment at some (lower) wage. The higher a worker's wage demand, the higher are the social adjustment costs (indeed, it may have been high wages that caused import competition and decline in domestic production in the first place). This may also be further affected if unemployment benefit programs are based on, or take into account, the previous wages paid. Thus, for a social cost-benefit analysis of a prospective trade change, we are left in the uncomfortable position of comparing the gains from the trade change with the adjustment costs to society that are in part determined by worker-wage demands.

A final issue is whether the real resources expended by displaced workers in retraining themselves and in job search costs (travel, relocation expenses, etc.), and the real resource costs incurred by society in trade adjustment assistance programs for retraining and relocation, are part of social adjustment costs. The answer appears to

be 'no', as presumably retraining increases skill levels, and job search expenditures result in a better match between worker skills and job requirements. Assuming workers are rational and the market for training is working reasonably well, the benefits to society of training (and of job search activities) are at least equal to resource costs involved in the training and relocation activities. Retraining and job search costs need not, therefore, be considered additional social costs arising directly from the trade change. If they are to be so considered, however, the separate benefit (e.g., increased skills) must also be included in the social benefit-cost calculus.

Overall, from an efficiency viewpoint, social adjustment costs give rise to two principal policy considerations. First, do the benefits from trade, properly discounted, outweigh the temporary adjustment costs? That is, are the costs to society of maintaining these resources in their initial production greater or less than the benefits of maintaining their output? Secondly, are there government measures that would reduce the period of unemployment and hence minimize adjustment costs?

Private adjustment costs to trade change are conceptually distinct from social adjustment costs. For trade-displaced workers, private adjustment costs include the after-tax wage loss while unemployed, net of any transfer payments (unemployment benefits and trade adjustment assistance payments) and net of the value of additional leisure, the loss of valuable seniority and pension rights and indirect benefits such as health insurance, and the loss of the value of job-specific human capital. The latter can be measured as a stock loss, or as the present discounted value of the reduction in wages when re-employed. It is also possible to consider the psychic costs of becoming unemployed and having one's specialized skills become worthless as additional private costs. (The social welfare function could, in theory, include these as social costs as well.) If lay-offs are concentrated in smaller communities, there is a possibility that home prices are depressed, an additional private cost. There can be "second round" private costs, especially in smaller communities, as local income, spending, and tax revenues decline. Shopkeepers and local taxpayers are frequent examples of those who bear indirect private costs. Voluntary and involuntary transfers among groups in society form a large part of the calculation of private adjustment costs, but are not part of social adjustment costs.

Owners of capital also suffer private adjustment costs as asset prices are written down to reflect new competitive pressure. This cost, however, may not fall on the current owner of the plant and equipment if the trade change was anticipated, and market values therefore adjusted downward, at the time of last sale of the assets in question. The owner of the capital at the time of increased imports may have

bought the assets at the reduced price, and there would be no justification for providing him with compensation. Indeed, correct anticipation of trade change can reduce private costs to both labour and capital. As a practical matter, such anticipation is often impossible for owners of long-lived fixed assets. Furthermore, ownership and management are often intertwined in smaller firms, and "sunk" capital inhibits shifting into other types of production. As a result, workers and management combine to resist adjustment and request protection or subsidies.

Private adjustment costs are important for two reasons. First, for reasons of equity or social justice, society may feel an obligation to compensate firms and workers for losses due to a trade change that is in the general interest. This obligation may be more strongly felt when the trade change is the direct result of a deliberate government action such as a tariff reduction. Such was the case under the 1962 U.S. trade legislation and the 1968 establishment of the Canadian GAAP program, both of which tied adjustment assistance to increased imports resulting from earlier tariff liberalization. At present, the link between earlier tariff reduction and increased imports need not be demonstrated in either country; increased imports, for whatever reason, can trigger adjustment assistance. In any event, compensation for equity purposes must consider private adjustment costs, and not social adjustment costs.

Secondly, to understand resistance to adjustment and the sources of protectionist pressure, one must look to private and not social adjustment costs. To the extent that an adjustment assistance program is designed to reduce protectionist pressure and "buy" a more liberal trade policy, it must compensate for private adjustment costs. However, even an adjustment assistance program that fully compensates trade-displaced labour and capital, and compensates communities, would not entirely dispel protectionist pressure. It is important to realize that resources that *remain* employed despite import competition will prefer protection to adjustment assistance (Cassing, 1979). Profits and wages would be higher with protection for those workers and capital owners who are able to compete. The constituency for protection is larger than those who might become unemployed or whose firms might close down, and for that reason it is not realistic to expect a trade adjustment assistance program to dissipate protectionist pressure fully.

To conclude our discussion of adjustment costs, it should be stressed that the benefits of adjusting to changes in comparative advantage and changes in international competitiveness should not be ignored. The prospect of greater economic efficiency and the accompanying longer-term benefits form the desirability as well as the impetus for adjustment. However, the act of adjustment is not costless. It is for

these reasons — the benefits from adjustment, the cost of adjustment, and the distribution of costs and benefits — that adjustment is a public policy issue.

Notes

[1] Richardson (1980) is an important exception.

[2] See Baldwin (1982). In evaluating the political economy of trade protection, a useful distinction might be made between explanations of the structure of tariffs and the structure of tariff concessions (as, for example, Cheh, 1974), and explanations of individual instances of increased protection through the escape clause.

Adjustment, Protection, and Employment

2

There is nothing unique about international trade as a source of adjustment costs, particularly labour adjustment costs. Technological change, shifts in the pattern of demand, relocation of industry within a country, and other factors can all lead to worker displacement and social adjustment costs as described above. The main differences appear to be a greater willingness to resist trade-induced change through protection measures, and separate government programs in some countries (United States, Germany, Canada, Australia, Netherlands) to deal with real and potential trade-related job losses.

Trade Adjustment Assistance versus Protection

It is tempting to contrast trade adjustment assistance (TAA) and trade protection by claiming that TAA programs are designed to facilitate adjustment, whereas protection measures such as tariffs and quotas impede the adjustment of resources. There is considerable merit to this view when TAA programs are designed exclusively to improve efficiency in the allocation of resources, and when protection is of a permanent nature. In that case the rationale for adjustment assistance is adjustment, and the rationale for protection is to maintain resources in their current (uncompetitive) activity. But when actual adjustment assistance programs are compared to temporary trade protection, the contrast loses some of its sharpness. To some extent the U.S. TAA program and many Canadian adjustment assistance measures share objectives similar to those of temporary protection. They tend to emphasize assistance as much as adjustment, and both adjustment assistance and temporary protection can fail to achieve these objectives for somewhat similar reasons. It is necessary to identify these objectives, and the reasons why they are often not achieved, to reconcile divergent views of adjustment assistance and trade protection as a response to import competition.

In principle, both protection that is perceived by the beneficiaries to be temporary and TAA programs can facilitate adjustment by

inducing resources to become more competitive in their current activities, or by moving resources to more productive activity. In that sense they may share a common efficiency objective. Temporary protection can, in principle, accomplish this by offering the distressed industry a breathing spell, which enables it to make productive investment and rationalize its operations, emerging with an improved competitive position in the same product lines. But why is the additional investment and rationalization not undertaken privately if the industry ultimately becomes competitive?

One answer may be that there are defects in the private capital market or in private entrepreneurship that inhibit the private sector on its own from making the necessary investments to again become competitive. Another related answer might be that the discount rate applied to future income streams by private investors may be greater than the social discount rate implicit in efficiency objectives. For example, the risk of expensively trained workers moving to competing firms within an industry raises the private discount rate applied to the benefits of a training program but does not affect the social discount rate. In such cases, the government is justified in correcting the private market distortion by offering temporary protection (or better yet, direct subsidies). Another answer, however, is that the industry may feel that it is cheaper and more secure to obtain protection from the government. Seeking protectionism can be as lucrative as responding to market forces, and, if given the option, rational people can be expected to pursue protection. This is particularly common where the private sector is traditionally fairly risk averse and accustomed to government intervention, as in Canada. However, it does not justify policy measures to protect the industry.

Temporary protection, especially with phased declining levels, can also, in principle, allow for the orderly movement of resources out of the industry by attrition, thus contributing to the efficiency objective of minimizing social adjustment costs (minimizing involuntary labour unemployment). We immediately see, however, the first of a series of dilemmas. Temporary protection can slow the outflow of resources or even encourage resources to flow into the industry, which conflicts with the objective of phasing down the industry through attrition. Unless the government can correctly identify which industries will ultimately become competitive and which will not, trade protection gives confusing signals and often fails to promote efficient allocation of resources. More specifically, temporary protection designed to slow the decline of an industry and moderate labour adjustment costs may be excessive and impede the outflow of resources. Import legislation generally fails to differentiate between protective measures that encourage industry adjustment, either through inducing enhancements in competitiveness or prompting resource outflows, and those that inhibit adjustment.

The second dilemma is that trade measures give blanket protection to all firms in an industry, some of which are apt to be viable and others not. By providing higher profits to the stronger domestic firms, weaker firms may be driven out of business even more rapidly, with unemployment concentrated at the firm level. This appears to have been the case in the U.S. stainless steel flatware industry. Many years of high protection coincided with sharp contraction of the number of domestic firms, and increasing domestic concentration by the two dominant domestic producers (Pearson, 1979). True, the smaller firms may have been eliminated with or without trade protection, but the point is that involuntary unemployment occurred at the firm level, even as overall employment was being maintained through protection.

Thirdly, increased protection that encourages investment may displace additional workers, as capital is substituted for labour. In that event the objective of minimizing labour adjustment costs is subverted even if the protection is successful in restoring the competitive position of the industry. Finally, temporary protection in practice may turn out to be long term, as has been the case with the textiles and clothing and shipbuilding industries in many countries. Clearly this obstructs rather than facilitates adjustment. In summary, although temporary protection can be defended on the grounds of increasing efficiency and minimizing labour adjustment costs, there are some serious difficulties in attaining these objectives.

Adjustment assistance programs are also defended on efficiency grounds, either making resources more efficient in their current activities or minimizing adjustment costs by helping resources move to other sectors. In that respect, the programs can have an objective that is similar to, not different from, protection. In both Canada and the United States, the main vehicle for making resources more efficient in their current activities are the provisions that assist firms — technical assistance, grants, loans and loan guarantees for working capital and expansion and modernization of productive facilities, and other forms of assistance. The main vehicle for reducing labour adjustment costs is worker services — training, job placement, and reimbursement for job search and relocation expenses. Canadian programs provide, in addition, portable wage subsidies, temporary employment opportunities, and early retirement benefits for displaced older workers.

But these programs, like protection, may frustrate rather than further the objectives of efficiency and minimum labour adjustment costs. Assistance to firms can increase the flow of resources to the distressed industry, blocking adjustment through attrition. And assistance to firms can lead to labour displacing investment, increasing unemployment in the industry and increasing labour adjustment costs. Finally, as described below, assistance payments to workers can

reduce the private costs of unemployment, prolong periods of unemployment, and increase rather than decrease social adjustment costs.

Both temporary trade protection and adjustment assistance have been defended on equity grounds. Liberal trade policies are in the general interest and bring economic gains to society. For reasons of fairness, however, many would argue that there should be some mechanism whereby the relatively small group that loses from trade should not bear the full burden, but should be compensated or offered relief for their injury.

Not only do adjustment assistance programs and temporary protection share to some extent an equity justification, but, in both instances, the equity motive can be in conflict with the efficiency motive. The conflict is clear with trade measures, which in practice often lock resources into uncompetitive and inefficient industries. And, as mentioned above, adjustment assistance can, under some circumstances, impede rather than facilitate adjustment.

The two policy alternatives are not identical in assisting capital and labour, however. One important difference is that trade protection assists *all* resources in the industry, whether or not they would have become unemployed due to imports. Both strong and weak firms receive protection. Workers who would have remained employed may also benefit from higher wages than they otherwise might receive. In contrast, adjustment assistance mainly assists specific firms, communities, and/or workers affected by increased imports. In that respect, the latter policy can target assistance more finely.

Another difference is that adjustment assistance can be purposefully directed towards workers, rather than firms, whereas both firms and workers benefit from protection. Such an emphasis on assisting workers makes sense if owners of capital are able to diversify their portfolio and protect against trade-related capital loss. Workers with a substantial investment in job-specific human capital skills cannot easily diversify and insure against loss. In such cases, the equity case for assisting workers is stronger than the equity case for assisting capital owners, and the ability to direct policy towards the former group becomes important.

Adjustment assistance programs and temporary protection share a third objective. Trade policy is made in a political context in which the interests and strength of various groups are reconciled. Both temporary protection and adjustment assistance can be seen as devices for "buying" a more liberal trade policy than otherwise would be feasible. They permit more liberal trade and contribute to economic efficiency in a larger sense. To be successful, however, they must be an acceptable "payment" to important interest groups as insurance against possible subsequent injury.

The problem with such "purchases" in the Canadian political environment is that certain groups, such as the textile producers, may be in a position to co-opt the influence of other political forces in order to raise their "price." The long-standing Canadian political imperative of reducing regional economic disparities undoubtedly plays a role in the making of textile sector trade policy. The geographic concentration of the industry in economically sensitive regions in Ontario and Quebec adds considerable strength to the voices of producer interests. Hence, sizeable trade adjustment assistance programs like the $250 million Canadian Industrial Renewal Board of 1981 may be a relatively expensive trade-off for the degree of trade liberalization achieved.

The evidence for the United States suggests somewhat greater success in this regard. Liberalizing the escape clause procedures and the TAA program helped sell the 1974 trade legislation that established the U.S. negotiating mandate for the Tokyo Round. Since the special deals were made prior to the negotiations, the 1979 trade legislation implementing the Tokyo Round met no serious problems in Congress. Similarily, the International Trade Commission (ITC), in considering 42 escape clause cases between 1975 and 1979, rejected 16, and the President rejected a further 18, bringing the number of cases receiving increased trade protection down to 8. Surely the existence of the TAA programs helped the ITC and the President to resist protectionist pressure in a large number of specific situations.

Discussion of the political context of trade policy brings up the issue of the "appropriate" role of government in the economy. The use of commercial policy instruments such as tariffs and global quotas is accepted in all countries, and, while regulated, is allowed under the GATT as being within the ambit of government activity. Financial assistance or direct government financial participation may have significantly greater potential for controversy, depending on the country. For example, direct government intervention to support a major import-competing company facing financial difficulty might be politically accepted, or indeed expected, in, say, France or Canada. The same government action in the United States could easily become the focus for extended public debate. Were it a question of imposing a tariff surtax or a quota, reactions in these countries would likely be much less divergent. The perceptions of the role of government in the economy are an important influence on both the "price" that may have to be paid and the range and viability of trade policy options.

Another factor to be considered in evaluating the political effectiveness of trade adjustment assistance programs is their small "take-up," or actual usage. Neither Canadian nor U.S. programs were initially very heavily utilized following the tariff reductions of the Kennedy Round. Nevertheless, this should not be taken as an indication that

they have not acted to mitigate protectionist pressures. The important aspect of these programs as far as the acceptability of trade liberalization is concerned is not the amounts paid out but rather the amounts available. Provided the announced allocation of resources to the program is a credibly large amount, they can function as a psychological safety net to firms and workers anticipating (incorrectly) injury due to import competition. Whether or not benefits, grants, or loan insurance are in the event accepted may be immaterial to their political effectiveness. On the other hand, as explained below, when the U.S. program was heavily utilized in 1980 and 1981, it led to a backlash, and far more restrictive legislation.

Protection and Employment

There are several points of an analytical nature that are deserving of emphasis in the discussion of trade adjustment assistance versus protection. Industry-specific trade measures such as tariffs and quotas are far less effective at maintaining employment than is commonly supposed. Jobs preserved in one industry by trade barriers are at the expense of jobs lost elsewhere in the economy. Moreover, while trade measures can affect the structure of employment among industries, they are less effective at preserving jobs in the protected industry than might first appear for a number of reasons.

First, it is generally not possible to expand domestic output and employment in an industry on a one-for-one basis with the reduction in imports, but only by some fraction of the reduced imports. The reason is that tariffs and quotas drive up price and reduce overall consumption of the product. Thus imports will decline by a greater amount than domestic production will increase. The more responsive domestic demand is to price increase, and the less responsive is domestic supply, the smaller will be the increase in domestic output and employment.[1]

Secondly, as mentioned above, trade protection can encourage capital deepening, or the substitution of capital for labour as the protected industry attempts to rationalize and become more productive. This is exactly the investment strategy pursued by the Canadian textile and clothing industry, the beneficiary of the country's highest level of protection (Textile and Clothing Board, 1980). A study of the U.S. textile industry also shows considerable labour-saving investment and innovation taking place behind protective trade barriers (Isard, 1973). Cable (1977) makes the same point with respect to the U.K. apparel industry. This again illustrates the potential conflict between the policy objectives of enhancing productivity and maintaining employment.

Finally, if the protected domestic industry is monopolized, the response to higher prices caused by tariffs and quotas may be to

continue to restrict output and capture monopoly profits. Quantitative restrictions on imports with a domestic monopoly can, at least for a large economy like the United States, actually lead to a further reduction in domestic output and employment.

Even when employment is increased in the protected industry, it is likely that an equivalent number of jobs are lost elsewhere in the economy, although they may be difficult to identify. One channel is through inter-industry linkages. Trade barriers operate to insulate domestic producers from foreign competition, enabling them to raise their prices. Any industry that uses the output of a protected industry as an input faces higher production costs as a result and is made less competitive internationally. This leads to the possibility of lay-offs in that industry (and possibly to the demand by that industry for protection).

Another channel is through induced currency changes. In a floating exchange-rate system, trade barriers that reduce imports in one sector tend to appreciate the home currency over what it would otherwise have been. This, in turn, reduces the international competitiveness of the full range of export- and import-competing sectors with consequent loss of jobs. Similarly, if the reduction in expenditure on imports decreases foreign incomes, there may be some loss of exports for the home economy. These negative effects are indirect and difficult to associate with specific jobs lost.

The inclusion of these indirect effects on employment is not an argument against protection in all cases. If temporary protection does lead to adjustment, it may be warranted. But the protection remedy can easily be abused, and the impact on employment is not limited to the protected industry. Jobs created artificially through protection in one sector affect jobs elsewhere in the economy, and these employment consequences are indirect and difficult to identify separately. Trade protection can reshuffle jobs among industries, but it is not effective at creating general employment.

Choice of Instruments

When society chooses to protect employment in an industry, it matters whether subsidies, tariffs, or quotas are used. Economists generally prefer direct subsidies to tariffs and quotas. Subsidies do not disturb the structure of relative prices and are therefore more efficient (less inefficient) than trade measures. Because price, and hence consumption, is less affected, a given level of domestic employment can be maintained with a smaller reduction in imports. Other advantages are that subsidies can be targeted on marginal firms, and subsidies must meet an annual budgetary scrutiny.

In actual practice, however, subsidies for domestic production and employment have serious shortcomings. Under the guise of "adjust-

ment policy," subsidies have been widely used to prop up declining industries in North America and Europe. In effect these "defensive subsidies" obstruct rather than facilitate adjustment (UNIDO, 1978; OECD, 1979; Wolf, 1979). One reason subsidies of various forms — regional aid, tax remissions, direct grants, loan guarantees, wage subsidies, and so forth — have become commonplace is that direct resort to import protection is discouraged by international trade rules (GATT). Until recently, the GATT distinguished between export subsidies, which were generally banned, escape clause relief, which had to meet certain criteria, and domestic subsidies, which were essentially unregulated. Governments seeking to protect declining industries therefore avoided the international complications of escape clause action with imaginative programs of assistance to domestic industry.

This may change as a result of the Subsidies Code agreed to in the Multilateral Trade Negotiations (MTN). For the first time, governments signing the code will undertake not to use domestic production subsidies so as to harm seriously the trade interests of other countries. Implementation of this change remains to be seen. The important policy conclusion is that subsidies for domestic employment should be as carefully circumscribed as import protection, including requirements that assistance should be time limited, and that new resources should not be drawn into industries that have permanently lost comparative advantage.

If direct trade restrictions are chosen to reduce labour adjustment costs, are tariffs or quotas preferable? The argument is sometimes made that quantitative restrictions are preferable because of greater certainty with regard to the output and employment effect, especially in periods of floating exchange rates when currency changes may swamp a particular tariff. There is some merit to this claim, although less than appears on the surface. In the first place, currency changes may simply offset the effects of domestic inflation, leaving domestic industries in an unchanged position. In that case the employment effect of the tariff remains constant because the inflation differential and the exchange-rate change are awash. Moreover, tariffs still affect the structure of relative prices in a floating exchange-rate system, and therefore continue to allocate resources, including labour, among industries.

Although quotas insulate domestic production and employment against a decrease in foreign production costs, and in that respect may have a more certain employment effect, the economic cost of a quota to the home economy changes when foreign supply prices change. If foreign prices fall, the difference between the lower foreign price and the higher domestic price widens, and the economic cost of the quota increases. If the decision to protect is the result of a rational calculus

of the costs and benefits of avoiding labour adjustment costs, then it is the tariff and not the quota that gives greater certainty that benefits exceed costs in the face of falling foreign costs. In other words, with quotas, the employment effect is certain but the costs of the policy are uncertain. With tariffs, the employment effect is uncertain but the costs are more certain. In addition, as mentioned above, for a large economy, quotas that lead to the same import level have smaller employment impact than do tariffs in the presence of domestic monopoly.

A final issue here concerns the use of "selective" safeguards designed to control "disruptive" imports. This is a particularly serious issue as it was failure to agree on selectivity (discriminatory treatment against the exports of certain countries) that prevented agreement on a Safeguard Code in the MTN. Selective safeguards would presumably be directed at new suppliers to the market, and especially at developing countries.

There is no economic case for selective safeguards. "Market disruption" is the term used to describe rapid increases in import penetration, but it is a somewhat unfortunate choice of words. In most instances it is disruption of the underlying factor markets, especially labour, that is of concern and not disruption of the product market. It is the adjustment cost to labour and perhaps capital that provides a rationale for safeguards. Labour markets are "disrupted" by imports regardless of source. To single out imports from one exporting country and label them disruptive, while continuing to accept imports from traditional suppliers, makes no sense. Indeed it is counter-productive, as it implies a freezing of the geographic pattern of trade. A double inefficiency is involved — the traditional inefficiency of the trade barriers and the further inefficiency of cutting off supplies from the least-cost foreign source.

Even if the latter does not occur, selective trade barriers tend to be ineffective at maintaining domestic employment, as unrestrained foreign suppliers may increase their market share through a form of trade diversion. Just such a situation necessitated the expansion of the Voluntary Export Restraints (VERs) between Canada and low-cost clothing exporters from the initial seven in 1978 to seventeen by 1981. In the United States, selective restraints on non-rubber footwear against Taiwan and South Korea diverted import demand to unrestrained suppliers. Finally, selective safeguards are a particularly unattractive exercise of economic power against the weakest members of the international political and economic system. If employment is to be protected in an industry, non-discriminatory trade measures — tariffs or global quotas — are preferable to selective quotas, OMAs, or VERs.

Trade and the Structure of Employment

It is sometimes argued that the policy conclusions of traditional trade theory should be modified when there are major imperfections in the labour market, especially when the supply of unskilled labour persistently exceeds demand. This would be the case when minimum wage legislation prevents a market clearing wage from being established. The argument is that some protection may be desirable to maintain output in industries that rely on unskilled labour. Protection would lead to an increased demand for unskilled labour, and a reduction of structural unemployment among unskilled workers (Gray, 1979).

This proposition is not directly tied to trade adjustment costs. The justification for protection does not depend on changes in trade patterns, but rather on the existence of a pool of unemployed, unskilled labour that is not responsive to macro policies of output stimulation. As Gray states, "The impact of the decline in the international-sector industry is more far-reaching than the problem of adjustment of displaced workers. When a low-skilled [worker] finds another occupation (presumably in the domestic sector), that [worker] uses up one of the jobs available to the set of low-skilled workers" (Gray, 1979, p. 22). In other words, there is bumping in the unemployment queue.

Protection seems to be a dubious way of dealing with structural unemployment of low-skilled workers. For one reason, if bumping is to be taken seriously, one must also look at the effects of exports on the labour market. A simultaneous expansion of imports, competing with low-labour-skill industries, and exports incorporating a larger fraction of skilled-labour services, will increase employment of skilled workers. This increases the advantages to individuals in acquiring skills, encourages industry to upgrade worker training, and, where possible, leads to the substitution of unskilled and semi-skilled workers. These effects tend to reduce the pool of unemployed unskilled workers.

Another reason for being sceptical of this argument is that a direct attack on structural unemployment of unskilled workers is apt to be more effective than protecting industries that employ these workers. This might involve reconsideration of the minimum wage and tax legislation that discriminates against labour in favour of capital (e.g., payroll taxes and the investment tax credit). Wage subsidies are another device that might be useful, particularly in conjunction with institutional and industrial training programs. Finally, improvement in the educational system to provide economically valuable skills would be a long-term objective.

There is a general argument to be made against active government intervention into labour markets. It is sometimes asserted that wage

subsidies, training programs, and the like, are less efficient than market forces in terms of both the adjustment process and its results. In this view, bureaucratic structures are simply no substitute for competition and the profit motive.

Several points may be raised as a counter to this general argument. As discussed previously, where the social benefits of a training program exceed the private benefits to an employer, government support of the program is justifiable on economic welfare grounds. A related view is that a well-trained work-force is more flexible in the face of changes in trade and technology. This confers a benefit — lower social adjustment costs — on society as a whole. Finally, where it exists, the objective of income redistribution on equity grounds is often argued to be a function that can be fulfilled only by government. In this case, training programs are the preferred policy instrument, since they can provide a stream of benefits in the form of increased earnings to a narrowly defined group (unlike either transfer payments or protection).

A second argument for protection as a means of creating employment in specific industries is that society has an interest, not only in the level of employment, but in the structural distribution of employment in various industries and occupations (and regions). There is a persistent opinion in Canada and the United States, especially among the business community, that it is critical to maintain a strong manufacturing sector. This argument is sometimes narrowed to "basic industries," output and employment in service sectors being in some sense less desirable. The following quotes express this concern for a strong manufacturing sector quite clearly:

> Unfortunately, the crucial role that the manufacturing sector must play if full employment conditions are to be established in Canada is often overlooked. A particularly deceptive argument in this context is the view that Canada's economy can prosper on the basis of growth in "service sector" job-creation independently of manufacturing sector job-creation. This view reflects a superficial understanding of our economy. A large part of the service sector is intricately linked to the production of goods. . . .[2]

> . . . trade in manufactured goods and . . . manufacturing industries have traditionally been the backbone of the U.S. high consumption economy. It is manufacturing which has been subject to the greatest productivity gains, and which thereby can support significant non-inflationary wage gains for its workers. Socially, it has been manufacturing which has been able to absorb millions of semi-skilled and skilled workers into well-paying jobs. Without manufacturing, the work force would become increasingly polarized between those highly educated and trained technicians and the mass of

semi-skilled and unskilled workers — straining the fabric of democracy. It is manufacturing, as well as natural resources, which is critical for the U.S. national security. And it is in manufacturing that most people consider the traditional comparative advantage in trade of the United States to lie.[3]

This is a difficult set of arguments to deal with. One is unsure as to whether the concern is for manufacturing output or employment. The buzz of words of reindustrialization and industrial policy are becoming common currency. National defence is sometimes invoked. Sometimes the argument is made that productivity increases in manufacturing are important sources of economic growth, and when manufacturing contracts, growth slows. Sometimes it is asserted that basic industries provide relatively high-wage employment, and therefore loss of manufacturing employment will impair living standards.

National defence arguments are beyond the scope of this paper, but the latter two points can be refuted. Trade protection, rather than protecting productivity gains and providing a source of growth, would do just the opposite. It would freeze the pattern of manufacturing activity and inhibit reallocation of resources, labour, and capital to more productive activity. It would slow reabsorption of resources into the higher productivity export sector. The second point is also a perversion. To the extent that relatively high-wage industries — autos, steel, certain chemicals — confront increased import competition, the solution rests with wage moderation and not protection. A country cannot "protect" high real wages through trade protection, but would simply penalize real wages elsewhere in the economy.

Finally, there may be an externality argument (where private and social costs and benefits diverge) relevant to manufacturing. For example, unpaid costs of air and water pollution force a divergence between private and social production costs. There is then a compelling argument for government intervention to correct this distortion by imposing pollution abatement requirements, as has been the case. But this intervention is directly connected to the externality, and it does not attempt to alter the structure or output indirectly through trade controls.

The same principle would be valid if positive externalities (social benefits in excess of private benefits) are associated with certain types of manufacturing output and employment. It is more efficient to intervene directly in support of these industries than to attempt to influence their output and employment indirectly through trade restrictions and export subsidies. But it must first be shown that there are, in fact, positive externalities associated with these activities before any intervention is contemplated. In any event the social costs of adjusting to trade changes are not themselves justification for

attempting to permanently alter the structure of employment through trade measures.

Notes

[1] Two extremes will yield no increase in domestic employment following a tariff assuming perfect substitutes — zero domestic supply elasticity and zero foreign supply elasticity.

[2] Department of Industry, Trade and Commerce, *A Report by the Second Tier Committee on Policies to Improve Canadian Competitiveness* (Ottawa, October 1978), pp. 6–7.

[3] Stanley Ruttenberg, "The Impact of Manufacturing Trade on Employment," study prepared for the Conference on the Employment Effects of International Trade sponsored by U.S. Department of Labor and National Commission for Manpower Policy, Washington, D.C., 15 November 1978, p. I-1.

Labour Adjustment Studies

3

The policy concerns over trade and adjustment have spurred empirical research on the magnitude and cost of adjusting to trade change. The studies can be grouped into three approaches — trade-employment balance studies, decomposition studies, and labour tracking studies. The first two approaches infer labour adjustment requirements by converting changes in the level and composition of trade into equivalent employment changes. The third approach, labour tracking studies, uses survey data of the actual experience of trade-displaced workers. The purpose of this chapter is to critically evaluate the methodologies used in these three approaches, and to summarize their findings. (See also Pearson, 1980.)

Trade-Employment Balance Studies

Trade-employment balance studies compare the number of jobs associated with exports and the (hypothetical) number of jobs that would exist if imports were replaced by domestic production. Mitchell (1976) provides a good description:

> The usual approach to the labor and trade issue has been to engage in "job counting." Essentially, this involves estimating the number of jobs which are embodied in exports and comparing this total with the number of jobs that would have been embodied in imports had they been produced in the United States. It is usually assumed that if the net total is positive, trade is employment-creating and if it is negative, trade is destroying jobs.

Trade-employment balance studies had a legitimate origin as a test of the factor endowment theory of trade in which the employment content of a bundle of exports was compared to a bundle of imports (Leontief, 1953). Since then, the desire to anticipate the effects of the MTN trade liberalization and increased competition in manufactures by LDCs have prompted many of these studies. The technique has been used to estimate the employment impact of trade liberalization (Salant and Vaccara, 1961; Lydall, 1975; Baldwin and Lewis, 1978; Birnberg, 1979; Cline *et al.*, 1978; Canada, 1978; Deardorff and Stern,

1979; Hazledine, 1981), to anticipate employment change associated with autonomous trade change (Schumacher, 1977; Balassa, 1979; De Grauwe *et al.*, 1979) and to identify, ex post, the employment effects of prior trade changes (U.S., 1978; Grinols and Thorbecke, 1978; OECD, 1979). Of the fourteen studies, eight are concerned with trade with developing countries (Balassa, 1979; Lydall, 1975; Schumacher, 1977; Birnberg, 1979; Grinols and Thorbecke, 1978; U.S., 1978; De Grauwe *et al.*, 1979; OECD, 1979).

Trade-employment balance studies can be useful in estimating labour adjustment requirements and costs, but they must be done very carefully. To measure *labour adjustment costs*, the attention must be focused on trade-related job *changes*, and not the level of jobs associated with exports as compared to imports. It is irrelevant for the purpose of estimating labour adjustment costs whether the net trade-employment balance is positive or negative. Many economists would also argue that the net trade-employment balance is irrelevant for any purpose, except perhaps to test the factor proportions theory of international trade. Even those who view the purpose of trade as the creation of employment must admit that the net trade-employment balance does not measure trade-related labour adjustment costs, which are the result of *changes* in the level and pattern of trade.[1]

The concern for measuring labour and adjustment costs must start with trade changes — either ex post (realized) or ex ante (prospective). This poses a considerable challenge. For ex post studies it requires specifying a bench-mark against which the observed development in the level and commodity composition of trade can be compared. The customary bench-mark for ex post studies is the level and pattern of trade that prevailed in some previous period, and the current trade is compared to the pattern that would have prevailed had trade remained unchanged. This approach can offer some insight into the amount of labour adjustment that has taken place if modifications described below are made, but it is not directly useful for analysis of adjustment policy. The reason is that the very measures that could have been used to maintain the initial level and pattern of international trade, say, tariffs, would have affected price, productivity, domestic output, and, hence, domestic employment. As a consequence, ex post studies that use an initial year bench-mark to measure labour adjustment are postulating an unrealistic and unattainable alternative.

A similar problem arises for ex ante studies that investigate the employment effect of prospective trade change. These too must specify a plausible scenario describing expected trade change. Three approaches have been used in the literature. One is to assume a balanced expansion with unchanged commodity composition (e.g., De Grauwe *et al.*, 1979). This seems unsuitable for policy analysis except in the unlikely event that one actually expects balanced expansion with unchanged commodity composition.

A second approach is to estimate the changes in trade expected from prospective tariff liberalization (e.g., Canada, 1978; Cline *et al.*, 1978). This can be done using a detailed general equilibrium model such as the Canadian Explor Model (CEM) employed for ex ante analysis by the Industry, Trade and Commerce (IT&C) study. This is inherently more satisfactory, as the labour adjustment costs are then grounded on a specific trade measure under consideration. However, such econometric models have at least one major drawback for this type of analysis. Their use of fixed production coefficients results in changes in relative input costs being simply passed through to purchasers of end-products, with no effect on factor proportions. A second limitation of this approach is that it only captures adjustment costs associated with a specific proposed tariff reduction, whereas the majority of changes in trade are unrelated to tariff change. For these reasons this approach can only give a partial description of labour adjustment requirements.

The final approach is to collect evidence on likely autonomous trade change, regardless of source, and examine the employment implications (e.g., Balassa, 1979). This is reasonably satisfactory if the trade changes are carefully estimated, but still fails to examine the structure of employment if the changes are resisted by trade measures. In that sense it cannot be complete for offering policy guidance.[2]

The research should meet other criteria to satisfactorily measure labour adjustment costs. First, job displacement estimates from increased imports should be adjusted for domestic demand growth and normal rates of labour attrition in the industry to estimate involuntary separations, the cause of labour adjustment costs. Obviously, imports can increase, causing *hypothetical* job displacement (jobs that would have existed had the product been produced in the home country), without actual job losses (workers discharged), if demand for the product is growing rapidly enough. To some extent lower-priced imports expand consumption, and are not at the expense of domestic output. Even when domestic output is declining, imports can increase without forcing involuntary worker separation if normal labour attrition is used to reduce the domestic industry's work-force.

Finally, to be most useful in estimating labour adjustment costs, the research should include estimates of gross labour displacement, as it is unlikely that trade-displaced workers in the import-competing sector will immediately find jobs in the expanding export sector. It should also consider job displacement in supplying industries, preferably through price-responsive input-output coefficients, and it should indicate the economic and demographic characteristics of firms and workers encountering import competition, as these characteristics help determine length of unemployment and adjustment costs.

While it is difficult to summarize in detail the results of these diverse studies on the impact of trade liberalization, some general

conclusions emerge. The studies of MTN tariff liberalization show that the gross labour displacement aggregated for all manufacturing is small relative to the labour force, and there may be a net gain in employment when additional exports are considered. The IT&C study estimated for the Canadian economy a gross loss of 57 000 jobs, concentrated in manufacturing, and a net loss of 20 000. Estimates for the United States represent even smaller proportions of the labour force. For example, Deardorff and Stern (1979) show a net employment loss in the United States of only 28 000 jobs, and a gain of 14 000 jobs if flexible exchange rates are used; Baldwin and Lewis (1978) show a gross employment impact in U.S. import-competing industries of 151 200, and a net loss of 15 200; and Cline *et al.* (1978) calculate a gross loss of 162 000 and a net gain of 17 000 jobs. Analysing the effects of a complete unilateral elimination of Canadian tariff and non-tariff barriers, as opposed to the partial cuts of the MTN negotiations, Hazledine arrives at a gross (direct) job loss figure of 148 000 and a net figure of 40 000. If accompanied by the complete elimination of trade barriers in other countries, the net impact on jobs would likely be significantly lower.

Gross job impact at the industry level shows considerable variability. The IT&C study calculates Canadian gross tariff impacts that vary from a loss of 12 790 jobs in the textile subsector to a gain of 2 240 jobs in the transportation equipment subsector. These estimates are based on a phased tariff reduction of 40 per cent on industrial goods and 22.5 per cent on agricultural goods, as well as a unilateral elimination by the United States of all tariff rates of 5 per cent or less. Cline *et al.* (1978) report the direct U.S. gross job effect of a 60 per cent multilateral tariff cut to range from 100 jobs lost in the mineral sector to 41 600 lost in the textile sector (still only 1.8 per cent of industry employment). Baldwin and Lewis identify 54 U.S. industries in which the job effect of a 50 per cent multilateral tariff cut would exceed 0.5 per cent of employment in the industry. Of the 54, however, they note that in 33 industries, normal growth of employment would offset the adverse employment effects of trade liberalization. The Hazledine study (1981, p. 60) emphasizes the "unevenness of a tariff's incidence on its industry," as well as the finding that employment expansion in the "low-cost" segments of 41 out of 98 Canadian industries outweighs the gross negative employment effect on the "high-cost" segments (p. 63).[3]

Studies that calculate a trade-employment balance with selected countries, or that attribute labour adjustment costs to imports from special countries (generally the developing countries), must be treated with even greater caution and can be misleading. Global trade-employment balance calculations are on shaky grounds, but there seems no merit in calculating bilateral trade-employment balances

with selected groups of trade partners. At a minimum, labour adjustment cost studies limited to trade with LDCs should take account of substitution of LDC suppliers for other foreign suppliers, as no new labour adjustment burden is created by pure shifting of imports from one country to another.

Lydall (1975) *assumes* a program of trade liberalization that leads to a replacement of domestic production by imports from LDCs on a dollar-for-dollar basis. He then assumes that additional foreign export earnings are respent (100 per cent) on imports from the liberalizing country, with a composition identical to the base year. From that, and from industry-specific labour coefficients, he estimates by industry the employment effect of these trade changes. The problem with all this is that one cannot conceive of a preferential trade liberalization scheme favouring LDCs that would leave trade with third countries unchanged. Thus his employment estimates should, but do not, account for changes in trade with third countries. If, in contrast, the trade liberalization program were non-discriminatory (i.e., MFN), then it is incorrect to look only at the employment effects of trade with a subset of countries. Finally, no adjustments such as attrition rates are made to the hypothetical job displacements to bring them closer to actual lay-offs.

Balassa (1979) shows that a *balanced* increase of $1 million in OECD trade with LDCs, with unchanged composition, would lead to 18.4 jobs gained in the export sector and 28.5 jobs displaced in the import-competing sector. A *proportional* expansion of trade, however, would have a very positive job effect in the OECD, by a factor of almost three to one. The reason is the large trade surplus of the OECD with LDCs in manufactures. Finally, Balassa has estimated the employment effect, by import-competing sector for the OECD as a whole, based on *actual projections* of trade. The most sensitive sectors in terms of job displacement are electrical equipment, apparel, textile mill products, rubber and plastic, and non-electrical machinery — exactly the sectors one might expect to encounter competition from LDCs. The gross job displacement for the OECD as a whole is estimated to be 1.7 million.

The studies by Grinols and Thorbecke (1978), and the OECD (1979) are ex post, looking back on the employment effects of actual trade flows with the LDCs. Grinols and Thorbecke estimate cumulative job losses and gains by industry by comparing U.S. trade patterns in 1963 with trade patterns in 1975, whereas the OECD examines trade with the newly industrializing countries (NICs) for the period 1973–1977. Direct and indirect labour requirements are found by multiplying the vector of trade change by input-output coefficients to capture the effect on supplying industries, and are then multiplied by labour-output coefficients. It is not clear how to interpret the results. As noted

earlier, the bench-mark of initial year trade is not a realistic alternative to calculate adjustment requirements. Moreover, the Grinols and Thorbecke study did not distinguish between increased imports due to demand growth and increased imports due to demand switching, nor is substitution of LDC for DC suppliers taken into account.

Given the diversity of the studies and the limitations pointed out above, too much emphasis should not be placed on conclusions of these studies dealing with LDCs. Moreover, there is a divergence of opinion on how important the adjustment problem is. De Grauwe *et al.* (1979) conclude that "increased trade with the LDCs necessitates significant changes in relative factor prices in Belgium if full employment is to be maintained" and a balanced expansion of trade with LDCs would require "a sufficient degree of sectoral factor mobility if prolonged unemployment is to be avoided" (p. 112). The OECD (1979) is even more dramatic: "In times of very slow (or negative) growth of total employment, however, such gross changes [resulting from trade with NICs] may result in a formidable adjustment problem as they call for a massive occupational and geographical redistribution of people actually employed." The OECD analysis, however, does not adequately document this conclusion. Grinols and Thorbecke conclude "a) that the overall employment effects of US-LDC trade are small, b) that the negatively affected industries are more localized and visible, and c) that the gaining industries are more spread out and less visible." And Balassa, considering the OECD as a whole, and emphasizing the positive effects of trade and specialization, notes that the required shift from low-skill to high-skill occupations would not reach one million, accounting for a small fraction of employment in these industries, and would be phased in over a ten-year period.

Decomposition Studies

Decomposition analysis offers an alternative approach to inferring labour adjustment requirements from trade data. Krueger (1978), Charles Frank (1977), and Cable (1977) use this method. One possible advantage over the trade-employment balance approach is the explicit comparisons of trade and productivity change as sources of employment change. But the approach is only useful for ex post analysis.

The method is simple enough. The growth rate of domestic employment in an industry is definitionally equal to the sum of the growth rates of domestic demand, labour productivity (negative if increasing), and the share of domestic output in consumption (negative if the share is declining). For example, Krueger (1978) employs two-digit SIC data for 1970 and 1976 on U.S. output, exports, imports, and employment to decompose the total change in employment between the two years into the contributions made by domestic demand growth, productivity

change, and the trade sector. By holding import share constant, the number of jobs "lost" to increasing import share can be calculated.

There are certain problems with this approach to measuring adjustment requirements. Most importantly, it measures employment levels that would have prevailed had imports, or the ratio of imports to domestic consumption, remained constant. But the two other sources of employment change — productivity growth and domestic demand growth — are themselves related to imports and import penetration levels. It is unlikely they would have remained unaffected had import share actually remained unchanged. For example, increased imports expand the domestic market through lower price, and can stimulate productivity improvement in domestic production. In that event a full modelling of the macro and micro relationships would be needed to capture the full employment effect of trade change. Moreover, the analysis should be done at a quite fine level of disaggregation if permitted by data availability. Import penetration and job displacement in narrow industries can be concealed if broad product groups are used.

Although widely made, the comparison between trade-related employment change and productivity-related employment change may be misleading. If productivity growth (including but not limited to labour-saving technological change) is concentrated in rapidly growing industries, and increased imports are concentrated in more slowly growing industries, then equal hypothetical job displacement from trade and from productivity may result in much larger actual involuntary worker separations due to trade than due to productivity change. In other words the normal findings that trade-related employment change is small relative to productivity-related employment change may be an inaccurate guide to actual relative labour adjustment costs. This is because in the one instance the calculated hypothetical job displacement tends to be offset by rapid growth of the industry, whereas in the other case hypothetical job loss tends to result in actual lay-offs.

Along the same lines, firms and labour unions may be better able to protect their workers from productivity-related separations than from job displacement due to imports. The reason is that productivity gain gives an additional margin to the firm, permitting some of the adjustment cost to be internalized, whereas import competition gives no such margin to the firms, and drives the weaker ones from the industry. In addition, it may be that productivity-related job displacement is spread relatively evenly among firms in an industry, whereas job displacement due to imports tends to close down entire firms. If so, then one can rely more heavily on attrition to cushion job loss from productivity than job loss from imports. These points remain speculative, and require further research. But they cast doubt on

simple comparisons of productivity change and trade as sources of labour adjustment costs.

Not unexpectedly, all three decomposition studies show that imports are generally a lesser cause of employment change than productivity or domestic demand changes. For the period 1970–1976, Krueger finds that demand change dominated imports as a source of employment change in 17 of the 19 two-digit SIC categories, and labour productivity dominated imports in 18 of the 19 categories. However, when partial analysis is done at the more appropriate four-digit level, the results are less clear cut. Labour productivity and demand still appear dominant, but the contribution of changes in import share is not negligible. It exceeds 0.5 per cent employment loss per year in 20 of the 42 industry subsectors, including 13 subsectors that exhibited absolute employment declines. This suggests that trade-related labour adjustment may still have posed a substantial burden, even if other sources were more important.

Charles Frank (1977) calculates that for the United States in the period 1963–1971, domestic demand growth was four times as important as imports, and labour productivity increase was three times as important as imports, as a source of employment change. Cable (1977), in examining four import-sensitive industries in the United Kingdom (footwear, clothing, cotton textile fabrics, and textile yarns), finds changes in net import penetration to be more important than productivity change in one case and equally important in a second case. Imports from developing countries are a minor cause of employment change, except for clothing.

Labour Adjustment Cost Studies

Research based on the actual experience of workers displaced by imports is inherently more satisfying in measuring adjustment costs than either employment balance or decomposition studies. Four studies are examined here — Jenkins *et al.* (1978), Glenday *et al.* (1980), Neumann (1978), and Corson *et al.* (1979). In addition, Brechling (1978) examines the role of attrition versus involuntary displacement in industries with declining employment.[4]

Jenkins *et al.* (1978) present an elaborate study of workers separated from two Canadian plants, one located in Ontario and the other in Quebec. Their purpose is to estimate private and social adjustment costs, and suggest methods for improving the compensation and efficiency objectives of adjustment assistance programs. They define private adjustment costs as the difference between the income stream a worker could expect if not separated (after-tax wage plus after-tax unemployment benefits and value of leisure for those periods he could expect to be unemployed), and the income stream expected if he were separated (i.e., unemployment benefits, value of leisure time during

unemployment plus his after-tax earnings in subsequent employment). The study does not measure psychic costs, possible loss of housing value when unemployment is concentrated in a small community, secondary costs to retail merchants in the area, and so forth.

The authors define costs to society from displaced labour as the present value of the difference in the social value of labour output before and after being laid off. The first is measured by the gross compensation paid labour before being laid off. The latter is the social opportunity cost of maintaining workers in their current employment. The social opportunity cost of maintaining labour in its employment is "the value of the net increase in total leisure time, plus the social opportunity costs of all migrants, retirees, and individuals who leave the labour force, plus the value of forgone expanded production, minus the value of output saved in the secondary sectors." We interpret this to be the cost to society that would be incurred if the displacement were prevented.

To calculate private adjustment costs, Jenkins *et al.* develop an empirical model to identify factors determining the duration of unemployment following separation, the probability of retaining subsequent employment, and wages in subsequent employment. The data bases are a Canadian government tracking survey of workers separated at the two plants, and the regional records of the Unemployment Insurance Commission. The value of leisure time plus unemployment benefits is set as a fraction of net-of-tax wage to account for less than perfectly competitive labour markets.

The results show the present value of income loss over a three-year period to vary between $1 315 and $2 983 (1971 Canadian dollars) for the two plants using one data set, and from $1 294 to $4 895 using the second data set. The higher estimates correspond to the plant with an older, more skilled, higher wage, and more stable labour force. The income loss is also sensitive to the displaced workers' age and the general unemployment rate. These results tend to confirm that the highest cost is to older workers who have firm-specific job skills (human capital) and who may find re-employment more difficult. They also confirm the importance of the level of general economic activity in determining the duration of unemployment and subsequent wage.[5]

Social adjustment costs are calculated using two approaches. The first is a partial equilibrium method, while the second presents a general equilibrium model of the regional labour market. The first method considers only the experience of workers directly affected by the decline in employment. The second method incorporates secondary effects working through labour migration, changes in labour-force participation, and indirect employment effects as a result of changes in spending.

Using the partial equilibrium method, the discounted social cost per displaced worker over a five-year period ranges from $8 740 to $9 950 for one plant, and between $4 839 and $5 387 for the second plant (1971 Canadian dollars). These figures, however, do not net out the economic costs of protecting the inefficient industry. Also, the results are sensitive to the specific characteristics of the situations — the ratio of permanent to temporary workers, relative initial wage rates, and the regional spending multipliers, and to the parameter describing value of leisure and other features. This is not, however, a criticism of the study. On the contrary, the research recognizes that each adjustment situation has unique characteristics, and deliberately developed a methodology that could be applied to specific and different situations.

Glenday *et al.* (1980) develop further the methodology employed in the Jenkins study. Concentrating solely on the Sherbrooke region, an area typical of those especially vulnerable to import competition, their estimates of social cost are generally in line with those of the earlier study (accounting for inflation of about 75 per cent between 1971 and 1978). Using the regional UIC records data base, the effect of a wage change in subsequent employment is then explicitly controlled by setting the wage change at zero. Table 2 gives their results. The higher gross economic costs for all types of workers, but especially for younger and for male workers, serve to emphasize the importance of wage gains in determining social costs of adjustment.

The control procedure is repeated for the estimation of private costs. In this case, again using the UIC data base, when changes in both wages (% W) and the proportion of time employed (% P) are allowed, the result in some cases is a gain in relative income rather than a loss. Table 3 also shows that maximum income losses are much smaller for all categories of workers. Thus, Glenday *et al.* add to the Jenkins study's conclusions the arguments that the wage rate in subsequent employment and the proportion of time workers are employed should be included as factors influencing the magnitude of social and private adjustment costs.

The study by Corson *et al.* (1979) is based on interviews of U.S. workers receiving trade adjustment assistance (TAA) benefits. The interviews were with a representative sample (963 workers) of TAA recipients who received their first payments in 1976. A sample (583 workers) of recipients of unemployment insurance (UI) was used as a control group. One particularly interesting finding was that a high proportion (72 per cent) of TAA recipients returned to their previous employer following the initial spell of unemployment. This was significantly higher than the UI control group experience (58 per cent). The implication is that trade adjustment assistance is being extensively used by workers who do not seek and find alternative

employment. This raises questions about the purpose and effectiveness of the TAA program, which is ostensibly designed to facilitate adjustment to alternative employment.[6]

Table 4 presents the findings concerning income and earnings loss by TAA recipients. What is especially striking is the difference in loss of household income and respondent's earnings between those workers who were recalled to their previous jobs (the majority) and those that sought employment elsewhere. For males who were not recalled, the earning loss is $9 380 in the first year following lay-off and an additional $5 550 loss in the second year. The losses for males who were recalled is $3 610 in the first year and $680 in the second (1975 dollars). The same pattern, with lower losses, occurs for female workers. The gross present discounted value of adjusted earning losses for male workers who were not recalled is $15 500. Subtracting TAA and UI benefits of $6 400 yielded a net real earning loss of $9 100. The latter figures are adjusted for lower tax payments, and adjusted for additional earnings that could be expected on the basis of trends in the workers' real wages and additional job experience.

Corson *et al.* also calculate the distribution of the discounted value of after-tax loss net of TAA and UI benefits. For example, 9.3 per cent of male workers not recalled increased their net earnings by $5 000 or more, whereas 14.8 per cent suffered net losses of $20 000 or more. Industries showing highest net losses per worker (with no recall) are steel, autos, and other durables. Lowest net losses per worker are in the footwear and apparel industries. Steel and autos also show the highest net losses for recalled workers, but these losses are small compared to the non-recalled workers.

Neumann (1978) sets out to evaluate the old (1962) U.S. Trade Adjustment Assistance (TAA) program, and in the process calculates the private costs to workers displaced by trade. The data base is a 1975 Pennsylvania State University survey of workers displaced between 1970 and 1973. The survey included workers receiving regular unemployment insurance benefits to serve as a comparative group. The survey showed that workers who lost jobs due to trade were different from those who lost jobs for other reasons in that they tended to be older, less educated, semi- or unskilled, with relatively long experience at their initial job. Moreover, average duration of unemployment was usually high for TAA recipients — 61 weeks for females and 39 weeks for males, as compared to an average of 33 weeks for workers who lost jobs for other reasons. These data do not prove that TAA benefits prolong unemployment because the worker characteristics in the two samples are quite different.

Using an empirical job search model, Neumann finds that receipt of TAA benefits prolonged unemployment by 2.8 weeks and increased subsequent wages by 5.4 per cent for males. This is interpreted by him

Table 2
PARTIAL EQUILIBRIUM ESTIMATES OF GROSS LABOUR EXTERNALITIES FROM DELAYING THE LAY-OFF OF THE FOUR TYPES OF WORKERS BASED ON THE SHERBROOKE ROE-UIC DATA BASE ESTIMATES

Type of Worker	Gross Labour Externality per Worker[a] (Constant 1978 $)	Relative Labour Externality[b] (percentage)
Permanent Lay-Off Cases[c]		
I U: male, 40, dependents	2 084	4.9
II U: male, 25, no dependents	−3 773	−11.2
III U: female, 25, no dependents	1 567	7.0
IV U: female, 40, dependents	7 073	23.1
No Change in Wages, W = 0[d]		
I U: male, 40, dependents	6 087	13.8
II U: male, 25, no dependents	4 096	12.6
III U: female, 25, no dependents	5 771	25.2
IV U: female, 40, dependents	8 949	29.2

Source: Glenday *et al.* (1980), Table 4.

[a] The gross labour externality per worker is the cumulative present value of the labour externality generated for five years of added employment. A growth in real wages of 2 per cent per year is assumed.

[b] The relative labour externality is the gross labour externality per worker expressed as a percentage of the cumulative present value of the wages of the worker over the five years of added employment.

[c] Permanent lay-off cases are estimated by setting the probability of being recalled to the same firm and the probability of resigning at zero.

[d] All variables have the same values as the permanent lay-off cases, except the wage rates in alternative employment are the same as in the job before the lay-off.

as a more productive job search. The results for females are less clear cut. There is some evidence that the TAA program may have prolonged unemployment, especially for married women who are secondary income earners, without encouraging productive job search and higher subsequent wages. This would not be surprising considering that the costs of job loss to secondary wage earners is generally lower due to relatively low initial wages, perhaps higher non-market opportunity costs, and more complete replacement of earnings while unemployed through transfer payments (assuming transfer payments are a declining proportion of wages at higher wage levels).

Neumann's calculations of private costs of job loss per worker due to trade range from $47 273 (1975) for males who never find subsequent employment and for whom the value of leisure is assumed zero, to −$481 for females who find subsequent employment, for whom wage loss is assumed to be transitory, disappearing after three years, and assuming the value of leisure while unemployed is 65 per cent of previous earnings. One interesting conclusion is that a TAA program

Table 3
INCOME LOSS CHARACTERISTICS OF THE FOUR TYPES OF WORKERS BASED ON THE SHERBROOKE ROE-UIC DATA BASE ESTIMATES

Type of Worker	% P[a]	% W[b]	Relative Income Loss[c] (percentage) within:			Maximum Income Loss (Constant 1978 $)	Time to Reach Max. Loss (months)
			1 yr.	3 yr.	5 yr.		
Permanent Lay-Off Cases[d]							
I U:	−10.1	+ 9.5	3.6	− 0.5	− 2.0	396	9
II U:	− 8.0	+24.2	−7.1	−12.3	−14.0	26	1
III U:	−28.1	+21.9	−5.3	− 9.3	−10.7	16	1
IV U:	−39.1	+ 7.5	5.4	3.1	2.6	940	60
No Change in Wages, W = 0[e]							
I U:	−10.1	0.0	9.1	5.8	4.5	2 314	60
II U:	− 8.0	0.0	8.4	5.0	3.8	1 452	60
III U:	−28.1	0.0	9.8	7.5	6.6	1 864	60
IV U:	−39.1	0.0	10.4	8.6	8.3	2 991	60

Source: Glenday *et al.* (1980), Table 10.

[a] Per cent change in $P = (PEQ - P^B/P^B)/100$, where PEQ is the long-run equilibrium P and P^B is the P before job loss.

[b] Per cent change in $W = (W^A - W^B/W^B)/100$, where W^B and W^A are wages before and after job loss respectively.

[c] The relative income loss is defined as the cumulative present value of the absolute loss in full income divided by the cumulative present value of the full income that would have been earned if the employment conditions before job loss were maintained. Income losses are defined as positive, gains as negative.

[d] Permanent lay-off cases are estimated by setting the probability of being recalled to the same firm and the probability of resigning at zero.

[e] All variables have the same values as the permanent lay-off cases, except wage rates in alternative employment are the same as in the job before the lay-off.

Table 4
INCOME AND EARNINGS LOSS OF TAA RECIPIENTS
(1975 dollars)

	Male		Female		
	Never Recalled	Recalled	Never Recalled	Recalled	Total
A. Change in Annual Household Income					
Reduction in Household Income					
1st year following lay-off	−3 800	−1 400	−2 650	− 750	−1 600
2nd year following lay-off	−3 100	+ 100	0	− 700	− 700
B. Change in Respondent's Earnings					
Reduction in Earnings					
1st year following lay-off	−9 380	−3 610	−6 530	−1 870	−3 920
2nd year following lay-off	−5 550	− 680	−4 750	− 910	1 610
C. Gross & Net Present Discounted Value of Earnings Losses					
Adjusted Real Earnings[a] (gross)	−15 500	−4 600	−11 100	−2 600	−5 700
Benefits (TAA + UI)	6 400	3 300	4 700	2 100	3 300
Net Adjusted Real Earnings Losses	− 9 100	−1 300	− 6 400	− 500	−2 300

Source: Carson (1979), Tables VI-1, 2, 3.
[a] Adjusted for the change in tax payments and additional earnings the worker might have expected on the basis of trends in real wages and additional job experience.

that fails to distinguish between primary and secondary wage earners may, due to higher marginal tax rate, have the perverse effect of discouraging job search and re-employment. But of course other factors, such as number of dependents, also affect the marginal tax rate as well. And the notion of primary versus secondary wage earners has some pitfalls.

Earlier in this paper we argued that estimates of hypothetical labour loss due to trade change should be adjusted for normal labour attrition (quits, retirements, etc.) before an estimate of actual worker displacement can be made. Brechling (1978) presents a time series analysis of labour turnover, based on U.S. data, that decomposes employment decline into (a) displacement (involuntary separations) and (b) unreplaced attritions. The results are reported for two highly aggregated sectors, durables and non-durables.

Following an earlier model by Hamermesh (1969), wherein the quit rate is considered exogenous to demand change in an industry, Brechling finds that for every 1 per cent reduction in employment in an industry, .79 per cent is accomplished by unreplaced attrition and .21 per cent by displacement. But when a different model is introduced, and the quit rate is made endogenous in the system, the results are quite different. A reduction in demand for the output of the industry leads to a reduction in new hiring, but it also results in a substantial decline in voluntary quits. This shifts the burden of employment reduction from unreplaced attrition to involuntary labour displacement, with unreplaced attrition capable of reducing employment by, at most, 43 per cent of the required reduction.

This tentative finding provides less comfort to those who would rely on attrition to carry the major burden of adjusting to trade change. But the result should be treated very cautiously. The highly aggregated analysis may conceal considerable intra-industry turnover, which, the author notes, would bias estimates of unreplaced attrition and displacement. Also, the analysis does not appear to fully distinguish between aggregate demand reduction and industry-specific change. Aggregate demand reduction may reduce voluntary quits during depressed economic conditions, whereas trade adjustment is likely to be industry specific, and thus effect voluntary quits to a lesser extent. Indeed one might expect that, holding aggregate demand constant, the voluntary quit rate would increase when an industry encounters severe import competition.

To summarize, the evidence from labour adjustment cost studies indicates the following:

- Adjustment costs differ considerably by industry.
- Higher adjustment costs are borne by older, more skilled, and higher-wage workers.
- The general level of economic activity is important in determining

the duration of unemployment and the subsequent wage, both of which in turn strongly influence adjustment costs.

- The majority of U.S. workers receiving TAA benefits incurred temporary unemployment and were recalled to their old jobs.
- There was a major difference in adjustment costs to workers who returned to their initial jobs as compared to those who did not.
- Workers who were not recalled suffered large real earnings losses that were not offset by TAA and UI benefits.
- TAA programs may prolong unemployment for secondary income earners.
- Lower subsequent wages may be an important part of private adjustment costs. This may be due to a loss of job-specific human capital value.
- The role of attrition versus involuntary separation in reducing industry employment due to trade change is unresolved.

Notes

[1] In many respects these studies are an attempt by economists to meet protectionists on their own ground by showing that the employment effects of trade are positive, or, at worst, only marginally negative. This can be a dangerous strategy. It skirts the fundamental rationale for trade — efficient resource allocation — and gives a patina of respectability to the neo-mercantilist position that the social justification of trade is employment. In some cases the net employment balance of trade may indeed be negative — should we then conclude that trade is undesirable? Clearly the answer is 'no'. Trade permits countries to specialize and use their resources more efficiently. Efficiency, not employment, is the gain from trade.

[2] Salant and Vaccara (1961) and Birnberg (1979) have also used the trade-employment balance technique to analyse ex ante the employment impact of trade changes. Their methods differ in several respects from other studies, of course, but their major conclusions are in line with those studies reviewed more intensively here, namely, that gross job losses are small in relation to total labour force.

[3] Hazledine (1981) makes estimates of net economic costs of protection by industry, albeit in a partial equilibrium model only. From a 98-industry data set, he finds that out of the 57 industries in which protection does save some jobs, only in 7 are the net economic costs negative. Furthermore, of the remaining 50 industries, 34 exhibit a ratio of economic cost to wages earned in saved jobs that exceeds one. This appears to imply that in these industries it would be "economically efficient to remove protection and pay the displaced workers their full wages for not working at all" (p. 65).

[4] Bale (1976) has attempted to estimate private and social costs of adjustment for the United States. However, Jenkins (1980, n. 48) makes a number of cogent criticisms of Bale's work that make it of lesser interest for present purposes. Jacobson (1978) has studied the costs to displaced workers regardless of cause. Though his work is also subjected to some criticism by Jenkins, his finding that earnings losses are highest in industries with low turnover and high wages are of some interest.

[5] One interesting finding of the Jenkins *et al.* study concerns the wage in subsequent employment of laid-off workers. For workers employed in the firm characterized by an older, more skilled and stable labour force, the subsequent wage was 10 per cent lower than the wage before lay-off. In contrast, the average wage rate in subsequent employment was 15 per cent higher than the initial wage for those workers employed by the second firm. This suggests that the age, seniority, initial wage, and skill mix of workers are important in explaining whether subsequent wages are depressed.

- Contrary to expectations, the initial wages and incomes of the TAA recipients exceeded the wages and incomes of workers in the control group. The largest net income losses for TAA workers who were not recalled to their initial job were suffered by workers in high-wage industries (autos, steel, other durables), while the smallest losses per worker were in the footwear and apparel industries. Of workers who were recalled to their jobs, steel and auto workers again had the highest losses, though these were small compared to non-recalled workers.

Adjustment — Further Evidence

4

The first section of this chapter offers some evidence of the pace of trade change on industrialized countries. Section 2 examines the economic and demographic characteristics of displaced workers. Section 3 then presents material on the operation of the Canadian and U.S. adjustment assistance programs.

Extent and Pace of Change in Trade Structure

Countries undergoing rapid and pronounced shifts in the composition of their trade face larger presumptive labour adjustment requirements than countries with more stable comparative advantage. Rapid shifts in trade composition need not imply higher adjustment costs, however, if labour markets operate better or economic growth is stronger in some countries than in others. If shifts are gradual, labour adjustment can be accomplished by attrition with no replacement, rather than by lay-offs.

One comparative measure of structural change in trade composition is to calculate the sum of the share changes, without regard for sign, for individual products, between an initial and terminal year. The structural change coefficient can range from 0, implying no change, to 2, implying maximum change in the composition of trade. Table 5 reports the results of these calculations for six major industrial countries for exports, for imports, and for imports excluding mineral fuels (to eliminate the impact of fuel price increases). The results are preliminary, as more detailed work at a finer level of disaggregation and adjusting for relative price change should be done.

In four cases (United States, France, Germany, United Kingdom), the structure of exports remained more stable than the structure of total imports or imports excluding fuels. Canada and Japan were exceptions, with substantial change in export structure exceeding change in non-fuel import structure. Comparing the six countries, the United States shows the greatest change in total import structure, and Canada the least. When fuel imports are excluded, the United States and the United Kingdom exhibit the greatest structural change, and

Table 5
COMPARATIVE CHANGES IN TRADE STRUCTURE
1960–1977

	Canada	France	Germany	Japan[a]	UK	US
	Coefficient of Structural Change[b]					
Total Exports	.73	.31	.21	.49	.20	.22
Total Imports	.30	.48	.57	.53	.62	.76
Total Non-Fuel Imports	.32	.55	.51	.25	.67	.65
Manufactures Imports (2-digit SITC)	.27	.29	.23	.10	.31	.32

[a] 1964–1977.
[b] Sum of absolute values of share changes of i^{th} commodity group, one- and two-digit SITC levels.
Source: OECD *Commodity Trade Statistics*, Series C, Various Issues

Japan and Canada the least. When the same analysis is done for the manufacturing sector alone at the two-digit SITC level, the United States and the United Kingdom again exhibit the largest change, with Japan showing the smallest change.

It is sometimes asserted that import "surges" are becoming more frequent, or that "trade disruption" is accelerating, implying the costs of adjustment to trade are increasing. The reasons for this, however, are not self-evident, nor has there been empirical documentation. Although the share of the trade sector in GNP has increased and tariff barriers are at historically low levels, these factors do not themselves create import surges or trade disruption; nor does rapid change in relative costs *among* foreign suppliers, which has been the basis for expansion of LDC exports of manufactures, and which merely shifts the source of imports away from traditional suppliers.

The "disruptive" impact of import surges can only be measured when imports are expressed as a percentage of domestic production (or consumption). Unfortunately, there are no good concordances between trade and domestic production classifications at the appropriate level of disaggregation, so that the hypothesis of increasing frequency of import surges cannot be conclusively tested. Nevertheless, there is some partial evidence for the United States, from Bureau of Census data on import penetration over time at the four-digit SIC level. These data suggest that high levels of import penetration extended over a wider range of products in 1976 than in 1972, and that import penetration in the initial range of products was higher in 1972 than in the 1967–1971 period. Also, year-to-year surges in imports, as measured by a three percentage point increase in the ratio of imports to domestic production plus imports, were considerably higher in 1975/1976 than 1971/1972.

Because the data are incomplete, the issue of increasing frequency of import surges and their relation to adjustment costs must remain speculative.

Who Must Adjust?

What type of worker is likely to bear the heaviest adjustment costs? In general, private adjustment costs are larger if workers are skilled and have job-, firm-, or industry-specific skills. Unskilled workers or workers with transferable skills may have lower private costs because they do not have human capital invested in their initial job, but this may be offset if unskilled workers have greater difficulty in finding re-employment. As a matter of equity, society may be more concerned if the adjustment burden falls most heavily in certain groups — minorities, low-wage low-income groups, and so forth. We are also interested in the characteristics of workers in industries most heavily affected by trade. Are they low-wage, low-skill industries? Are displaced workers regionally concentrated? Do workers who are displaced by imports return to their initial jobs or change sectors?

There is considerable evidence describing the economic and demographic characteristics of workers (and industries) that must adjust to trade change. Sources include labour tracking studies, experience from trade adjustment assistance programs and trade employment balance studies. The major findings are summarized here.

Jenkins *et al.* (1978) compare workers' experience in two Canadian firms (X and Y). The worker sample for firm X was, in general, older, more skilled, and with higher wages and seniority than workers in firm Y. With respect to firm X, it appears that workers who were older and who had a working spouse had longer periods of unemployment, and that the higher the general unemployment rate, the longer the period of unemployment. With respect to firm Y, the duration of unemployment was longer for unmarried workers, for workers who had working spouses, and for workers with lower skill levels. In the short run (one month), a high general unemployment rate was associated with low probability of finding a job, but, surprisingly, in the longer run the association is reversed.

The study of displaced workers in the Sherbrooke region by Glenday *et al.* (1980) lists a number of additional factors affecting the change in wage rates and in the proportion of time employed. The study finds that workers' proximity to urban centres, with their characteristically large heterogeneous labour markets, generally results in greater ease of re-employment and smaller wage changes. At the regional level, areas that are relatively isolated from large labour markets and in which skills demanded are fairly uniform are particularly vulnerable to shut-downs of major firms. The resulting trend towards out-migration lowers the demand for housing and makes relocation more

difficult for home-owners, who face a potentially costly capital loss on the sale of their property.

For the United States, Corson *et al.* (1979) found the TAA recipients to be older, less educated, more stable in their employment history, more likely to be minorities, and more likely to be union members than the average unemployed manufacturing worker. As noted earlier, Newmann (1978) analysed a sample of workers displaced by imports and who were qualified for TAA benefits between 1970 and 1973. He concludes that in comparison to workers unemployed for other reasons, trade-displaced workers were older, less skilled, less educated, and had longer experience at their initial jobs. These are characteristics that would make it more difficult for them to find another job.

A recent U.S. GAO study (1980) provides some additional insight into the characteristic of workers receiving TAA benefits. The study is based on a random sample of 200 petitions received and certified as of December 1977, and a random sampling of workers in each of the 200 petitions. Nineteen industries were represented in the sample of 200 petitions, with apparel (56), leather (39), and primary metals (22) dominating. The universe from which the sample was drawn (most TAA recipients) shows that 55 per cent of the successful petitioners came from unions, and that 77 per cent of total benefits paid were paid to union members. The United Steel Workers of America and UAW members received 57 per cent of all benefits paid.

In the sample, workers are broken out into those who had returned to work at the time of interview (85 per cent) and those that had not (15 per cent). In view of the higher adjustment cost of prolonged unemployment, the results are of some interest. The survey shows that workers were more likely to be unemployed if (a) they were older, (b) they were female, (c) they were black, (d) they were unmarried, but, if they were married, their spouse was working, (e) they had not completed the twelfth grade. The tentative conclusion is that age and education may have reduced the opportunity for re-employment, and other factors such as marital status to a working spouse may have reduced the need for immediate re-employment. The statistical analysis, however, is not sufficient for firm conclusions.

Studies of trade and employment offer further insight into the nature of worker adjustment requirements. For Canada, the Report of the Labour Force Tracking Project (LFT Report) contains data on workers laid off in import-competing industries. The duration of unemployment for workers laid off from the textiles, clothing, and electrical/electronic (E/E) industries was found to be positively and significantly related to age over 30 and general unemployment rates, and negatively and significantly related to years of schooling and age under 30. Females experienced significantly longer periods of un-

employment than males, while marriage influenced males favourably but females unfavourably. Several other factors also appeared to influence the adjustment process, though tests of significance were not done: higher-paid workers found jobs faster, and occupational mobility generally reduced durations of unemployment, while workers who eventually found jobs in the same industrial sector as their previous jobs generally experienced shorter periods of unemployment (except for the E/E sector).

Baldwin and Lewis (1978) analyse the effects of the MTN on U.S. workers by state and by fourteen occupational groupings. They find that a 50 per cent tariff cut increases demand for R&D workers, production-related technical workers, farmers and farm labourers, and reduces demand for other workers, especially semi-skilled labour. The amounts, however, are very small fractions of the labour force. Job losses are concentrated in the older industrial states — Massachusetts, Michigan, New York, and Pennsylvania — while gains are found in California, Minnesota, and Texas. Industries most adversely affected, as a percentage of their labour force, are rubber footwear, food utensils and pottery, motorcycles and bicycles, and artificial flowers. Footwear and steel are the major losers measured by number of jobs lost.

Balassa (1979) has estimated the employment implications, by occupational category, of projected OECD manufactures trade (exports and imports) with developing countries. He finds gains for professional and technical workers, managers and administrators, clerical workers, and skilled workers, with the major losses concentrated in unskilled and semi-skilled production workers. In other words, increased trade with LDCs will involve a shift in labour demand from low to higher skill employment, as might be expected. Net job losses are concentrated in textile and apparel, electrical equipment and supplies, and rubber and plastic products.

The U.S. Department of Labor (1978) identified domestic industries for which trade has had the largest apparent negative impact during the period 1964–1975. They then examined the demographic and occupational characteristics of workers in these industries and compared these characteristics with overall manufacturing. They did not test statistically the comparison, however. To summarize their findings, the negatively affected industries employed disproportionately more females and minorities, employed workers with lower education and skill levels, and paid lower wages than the average of all manufacturing.

Finally, Pearson (1981) examines industry and worker characteristics of U.S. firms successfully obtaining a positive ITC escape clause finding between 1975 and 1979. Again the statistical significance of the findings was not established, but the results are interesting and

suggestive. The study showed that industries receiving a positive escape clause finding from the ITC had higher wages, labour productivity, and capital intensity than the average of all manufacturing, suggesting that the stereotype of low-wage, low-productivity industries seeking escape clause relief needs updating. The recent filing by U.S. auto workers for relief confirms this, although their petition was denied.

One conclusion is that evidence from trade studies may be different than evidence from adjustment assistance programs. Trade studies confirm that industries under heavy competition from imports employ relatively large amounts of unskilled and semi-skilled labour, at relatively low wages. TAA recipients and industries that the ITC has recommended for escape clause relief, however, include some high-wage industries with strong unions. The empirical evidence does confirm conclusively that the interrelated variables of age, skill levels, and wage become important in determining the magnitude of worker adjustment costs, once the initial unemployment has occurred.

Adjustment Assistance Programs

The final major source of evidence about the nature of adjustment is experience from actual adjustment assistance programs. While it is not our purpose here to provide a detailed evaluation of these programs, some description of how they operate in the larger policy context is in order before discussing their results.

In Canada, there are two mechanisms by which compensation for, or relief from, increased imports can be obtained. First, imports that injure or threaten to injure Canadian producers under fair trade practices can be subjected to a temporary surtax or to a quantitative restriction.[1] The latter can either be a global quota imposed under Article XIX of the GATT or a bilateral export restraint agreement negotiated directly with the exporter. A request or complaint, usually from a company or industry representative, is filed with and reviewed by the appropriate federal department. A recommendation then goes out from that department to the Cabinet, which has the option of accepting it, rejecting it, or referring the issue back to the department for further study.

The second method by which compensation or relief may be obtained is by application under one or more adjustment assistance programs. These programs are to a significant extent directed at specific sectors of the Canadian economy. Under recent funding initiatives such as the Industry and Labour Adjustment Program (ILAP), eligibility for assistance has taken on an explicit geographic dimension as well. Expenditures by the Canadian Industrial Renewal Board (CIRB) on adjustment in the textile and clothing sectors also have a distinct geographic bias by virtue of the regional concentration of those

industries. In the first instance, then, Canadian policy defines groups losing from trade in sectoral and geographical terms.

There is also a clear distinction made between firms' and workers' adjustment assistance. For example, the $350 million allocated to the ILAP is split evenly between industry and labour adjustment. The Department of Industry, Trade and Commerce administers the industry portion under the Enterprise Development Program (EDP), while Employment and Immigration Canada and Labour Canada jointly administer the labour portion. The funding and administration of other adjustment assistance measures — namely, EDP components other than ILAP, and worker-training and mobility programs — is divided in a similar fashion.

This administrative and financial dichotomy in adjustment assistance programs is paralleled in terms of the criteria used in each case to determine eligibility. Adjustment assistance available to firms in 1968 under the original GAAP program was subject to quite restrictive criteria. Firms had to be manufacturers, producing a commodity on which tariffs had been lowered as a result of the Kennedy Round, and engaged in restructuring their operations to take advantage of export opportunities. These criteria were gradually relaxed in subsequent years. By 1975, any manufacturing firm was eligible provided that it was "subject to international competition."

Under the present EDP, the most important criterion is that a firm's proposed project or projects constitute a "significant burden" on its resources. As such, EDP financing in the form of loans, loan insurance, and/or grants represents a last resort, so that the effect is an incremental one that supplements rather than supplants private-sector resources. Another major criterion is that the firm and its projects must be commercially viable according to the "corporate approach" analysis of the EDP Board. On the whole, then, adjustment assistance to firms focuses not so much on the cause of adjustment problems — be they trade related, technological, or otherwise — as on the effects assistance programs can produce.

On the labour side, the situation is somewhat different. General labour market development programs do operate for the most part in a flexible fashion and without distinction as to the cause of adjustment problems. The same can be said of the Unemployment Insurance (UI) program. However, programs and policies regarding the more specific issue of adjustment assistance tend to restrict eligibility and discriminate in favour of workers laid off strictly as a result of trade changes. Certification of workers under the ILAP, for example, requires that they be laid off from companies in designated communities and within designated industrial sectors in all cases. Firms, on the other hand, may be designated for ILAP assistance by sector alone. In order to be eligible for the Portage Wage Subsidy (PWS) component of ILAP,

workers must fulfil additional requirements regarding age — over 45 — and length of employment in the designated industry — five of the last ten years. The Labour Adjustment Benefits Program (LABP), directed specifically at lay-offs due to import competition and government restructuring policy, makes available early retirement benefits only under still more restrictive conditions regarding age, length of employment, size of lay-off, and exhaustion of UI benefits. In addition, employment earnings by beneficiaries have been subject to high marginal taxation rates that act as disincentives to re-employment.

U.S. trade legislation also provides for two different types of relief or compensation, either through increased trade restrictions, or through adjustment assistance payments to trade-displaced workers. An escape clause petition can be filed under section 201 of the legislation.[2] If increased imports are found to be a "significant" cause or threat of injury, where significant means important and not less than any other cause, the International Trade Commission must recommend a remedy for the injury, either increased trade barriers or adjustment assistance. In turn, the President can either accept the ITC's recommendation or reject it and substitute his own remedy, including negotiating an Orderly Marketing Arrangement (OMA), which is a remedy option not open to the ITC. Finally, if the President does not accept the ITC's recommendation, Congress can override the President's decision and insist on the ITC's recommendation.

On the adjustment assistance side, the United States has had three different programs, and their evolution testifies to the difficulties in reconciling the objectives of adjustment versus assistance and equity versus efficiency. The first program, established in 1962, was a failure. The principal reason was that eligibility requirements were too stringent — it was necessary to show that imports were increasing, that the increase was caused in major part by a previous trade concession, that firms or workers were being injured, and that the increased imports were the major cause of injury. As a consequence of the stringent criteria, no firms or workers were certified between 1962 and 1969, and very few qualified between 1969 and 1974. No matter what evaluation criteria are used — adjustment, assistance, or to forestall protectionist pressure — a system that rejects virtually all requests must be judged a failure.

The Trade Act of 1974 attempted to correct the flaws by relaxing eligibility criteria and enlarging benefits. Specifically, adjustment assistance and escape clause relief were decoupled, so that TAA could be provided without a positive escape clause finding. Under the 1974 legislation, the link between increased imports and previous trade concessions was severed, and it was only necessary to show that imports were an important, rather than the major, cause of injury. Additionally, worker benefits were increased, reimbursement for job

search and relocation expenses was added, and a program for assisting distressed communities was established.

In the early years (1975–1979), the size of the program remained manageable. Between 1975 and September 1979, a total of 508 498 workers received total payments of $815 million. The industries making most extensive use of the program were apparel, footwear, electronics, and steel. However, in 1980 and 1981, two problems became apparent and forced a radical change in August 1981.

The first problem was the dramatic growth of benefit payments, especially to the cyclically depressed auto industry, and the implications of that growth for the federal budget deficit. Total outlays surged from $259 million in fiscal year 1979 to $1 624 million in 1980 and an estimated $2 743 million in 1981. A total of 409 000 auto workers received benefits through December 1980 (U.S., 1981). The payments to auto workers raise difficult questions. One reason is that automobile manufacture is a high-wage industry with better-than-average worker protection through Supplemental Unemployment Benefits (SUB) plans. Both the high wages and the SUBs weaken the equity argument for TAA benefits. The existence of company-funded, private SUBs complicates the compensation-for-injury picture. SUB payments are not considered when calculating TAA payments, and a GAO study concluded that some workers may have received a combination of benefits greater than their take-home pay had they continued working. Thus both over- and under-compensation for injury may have existed (U.S., 1980).

The second problem was that new studies showed that neither the compensation nor the adjustment aspects of the program were working well. With respect to adjustment, the U.S. GAO (1980) study estimates that 23 per cent of TAA certified workers received job counselling, 2 per cent received training, 8 per cent received job referral services, and that less than 1 per cent received job search and relocation allowances. One reason was that 58 per cent of workers had returned to work by the time they applied for adjustment assistance. Another reason was that workers were awaiting recall (and indeed most were recalled). A third reason is that 23 per cent of workers who had not returned to work or retired at the time of interview were not aware of training benefits, and 60 per cent were not aware of relocation allowances.

Department of Labor data and the Corson *et al.* study (1979) confirm this picture. Of 494 000 workers certified to September 1979, only 3.9 per cent were placed by the program, 3.7 per cent entered training programs, and 0.9 per cent received job search and relocation benefits. Corson *et al.* found in their sample that only 34 per cent were aware of training services, and less than 13 per cent were aware of job search and moving allowances. These results, of course, are not so surprising when one remembers that 81 per cent of workers expected to return to

their original employer, and 72 per cent actually did. What is enlightening is that the TAA program does not adjust so much as it offers payments to workers who are temporarily laid off and return to their original jobs.

Nor did the TAA program appear to compensate workers at the level of their injury. The Corson *et al.* study showed substantial present discounted earnings losses for workers who were not recalled ($15 000) with TAA and unemployment benefits offsetting only $6 400. Fifteen per cent of non-recalled workers had net earnings losses of $20 000 or more. These losses are compounded by late arrival of payments — the average delay from lay-off to time of first payment was fourteen months.

The budget problem, the apparent failure of the retraining and relocating provisions, and the perceived inequity of TAA payments exceeding customary unemployment payments combined to force a sharp change in the program in August 1981. Under the new amendments, eligibility has been tightened — increased imports must now be shown to be a "substantial cause" of injury rather than the weaker "contributed importantly."[3] Moreover, TAA payments can now be made only after regular and extended unemployment benefits have been exhausted. Finally, TAA payments are to be made at the generally lower state unemployment insurance benefits level, and the combination of regular unemployment, extended, and TAA benefits cannot exceed fifty-two weeks, except for an additional twenty-six weeks if the worker is in approved training. At the same time, retraining and relocation provisions were strengthened.

While the long-term effects of these changes cannot yet be known, the immediate effect is a sharp cut-back in the benefits paid. Between October 1980 and September 1981, total payments were $1 440 million, whereas between October 1981 and May 1982, expenditures dropped to $82 million. Average weekly payments fell from $122 to $119 (U.S. Department of Labor, unpublished data). A real danger exists that with a far smaller and less generous program, adjustment assistance will no longer be considered a politically viable alternative to trade protection. In that event, the U.S. ITC and the President may increasingly choose trade restrictions over TAA, with unfortunate consequences for longer-term adjustment.

In contrast to the TAA program in the United States, Canadian worker adjustment programs, except for the LABP, are general in nature. This greatly complicates evaluation of their impact on adjustment since they are designed to remedy labour-market imperfections and distortions of all types, ranging from disparities in regional employment opportunities to seasonality of income in certain occupations. Not only are such problems not necessarily related to trade, but they may also be problems of underlying employment

structure rather than adjustment *per se*. It would therefore be misleading to quote statistics on Canadian training, UI, counselling, and mobility programs as an indication of the extent of trade adjustment assistance in Canada. Suffice it to say that UI payments probably play the most important adjustment assistance role of all the general programs, followed by the various training and counselling programs. Mobility or relocation allowances, enhanced under ILAP or otherwise, are, generally speaking, of much lesser significance.

As regards the LABP, its role is mainly one of compensation. Older workers laid off from the textiles, clothing, footwear, and tanning industries with little prospect of re-employment at or near their former wage are, in certain restricted cases (see above), eligible for an extension of the usual UI benefits. In keeping with the role of the program, only 2.9 per cent of its beneficiaries have ever become re-employed, and few indicated a willingness to move for that purpose.

While LABP is not strictly comparable to the U.S. TAA program, direct data from it yield several useful insights. First, the LABP is much smaller than its U.S. counterpart described below. It is intended to cover only those older workers who, after lay-off, have been unable to get jobs and are ineligible for adequate assistance from the general programs. In actual fact, the number of workers receiving LABP benefits at any one time over the period from March 1980 to February 1982, for example, averages only 533. The tightly targeted nature of the program is quite evident; and even within the target groups, the restrictive eligibility criteria appear to ensure that the LABP operates strictly as a last resort.

Secondly, as Glenday *et al.* (1980, pp. 54–56) point out, the program "appears to be especially generous even after subtracting the unemployment insurance benefits which would have been paid." That being said, it is however a fact that the aggregate impact of such generosity is severely limited by the eligibility conditions discussed above, as well as by the work disincentives created by discriminatory tax treatment of employment earnings of LABP recipients.

Thirdly, though the magnitude of LABP payments is not indicative of Canadian workers adjustment requirements, trends over time in benefit expenditures and numbers of workers assisted are of interest. Expansion of the program has varied widely over the years while eligibility criteria remained essentially unchanged. Total benefits paid and number of workers assisted in the main eligible sector, textiles and clothing, grew erratically in the early years of the program. But by fiscal year 1977, the year-on-year increases, respectively, were 98.0 per cent and 79.8 per cent. At the end of 1982, expansion had slowed significantly, with benefits of $5.15 million for 769 workers in textile, clothing, footwear, and tanning industries representing increases of just 37.0 per cent and 44.8 per cent (Labour

Canada).[4] Benefit expenditure forecasts for the next two years, however, are in the area of 80 to 90 per cent increases once again.

This expected increase, and, to an extent, past variation, may be attributed largely to the downturn in traditionally uncompetitive industries rather than to the broadening of the LABP under the ILAP initiative. This contrasts sharply with the U.S. TAA program, whose rate of expansion has been and continues to be governed largely by changes in the requirements for eligibility. Other differences between the two countries' approaches to labour adjustment are more obvious: the weekly amount of LABP benefits has risen steadily and is likely to continue to rise; and new initiatives in labour market policy, such as work-sharing programs, are being implemented on a trial basis and are receiving a great deal of attention as new methods of enhancing adjustment. A distinctly different picture is presented in the United States by the shrinking weekly TAA benefits and an increasingly hands-off approach to labour markets in general.

To conclude the discussions of Canadian and U.S. programs, four important aspects of the adjustment assistance measures described here require specific mention. First, the continuing emphasis on trade changes as a justification for special assistance is questionable on equity grounds in the absence of a link with previous tariff reductions by government. Such a policy prompts a legitimate question: why compensate for trade-related injury and not for other sources of economic injury? Labour-displacing improvements in technology and shifts in consumer demand due to changes in tastes might, from a simple equity point of view, also give rise to justification for assistance. The presence of a link to negotiated tariff cuts casts trade adjustment assistance in the light of compensation for a deliberate, and in some cases individually detrimental, government action. Conversely, in the absence of such a link, a clear equitable basis for that same assistance is lacking.

Secondly, the U.S. finding that most workers return to their initial jobs, and do not need assistance to "adjust" them to new occupations raises serious questions. If the objective is to tide workers over during temporary lay-off, why should there be a special program for trade-displaced workers? And to what extent does the objective of assisting conflict with the objective of adjusting — that is, does the program slow adjustment by encouraging workers to delay re-employment?

Thirdly, even assuming that trade-related injuries are somehow deserving of special and specific relief, it is exceedingly difficult to pin-point commercial policy changes as the sole or even the major cause of a given lay-off or closure (Glenday *et al.*, 1982). Though a tariff cut may precipitate such a managerial decision, underlying factors almost certainly include domestic economic considerations as

well as problems peculiar to the firm in question. What is important from a policy viewpoint is not to narrow a program's scope to exclude causes of adjustment other than trade, but rather to ensure that each assisted project or firm generates a net economic benefit.[5]

Fourthly, reliance on adjustment assistance versus temporary protection also requires clarification. While usually posed as policy alternatives, experience shows they sometimes accompany one another. The Canadian textile policy through the 1970s to the present of VERs, global quotas, and import surveillance was supposed to have been phased out, along with tariffs, and adjustment assistance brought in. In fact, both adjustment assistance and the various "temporary" protection measures remained in place throughout the last decade and have been extended until the mid-1980s at least. Whether this will change with the introduction of the CIRB is, however, a subject for some speculation. The non-rubber footwear case provides a U.S. example in which both the TAA program and temporary protection were used — the first through the Footwear Revitalization Program and the second through OMAs with Taiwan and South Korea.

Scrapping adjustment assistance programs altogether is probably not the correct answer. They have obviously relieved hardship, and they may have been useful in deflecting protectionist pressure. Further reform should be directed towards (a) targeting payment more closely to those groups of workers most in need, regardless of cause; (b) improving, at least in the United States, worker services for those who must change jobs; (c) providing more timely benefits; (d) removing any disincentives that discourage adjustment and re-employment; and (e) redesigning programs to avoid over-compensation where it exists.[6]

Notes

[1] Both in Canada and the United States, producers and workers have recourse to injury or threat of injury from unfair trade practices in their country's respective anti-dumping and countervail legislation. This discussion here on trade restrictions pertains to injury or the threat of injury from fair trade practices where dumping or foreign subsidies are not the cause of increased imports.

[2] See previous note.

[3] "Substantial cause" is a cause that is important, and not less than any other cause, as, for example, recession. The U.S. auto industry failed to demonstrate that imports were a substantial cause of injury in the 1980 escape clause case.

[4] Economics and Industrial Relations Branch, Labour Canada; unpublished data communicated to the author.

[5] This approach is reflected to some extent in the operation of many of the Canadian industry-side adjustment assistance measures. For instance, import competition, as a basis for recommending assistance, is still formally recognized under the EDP. However, it is no longer of any importance and is in fact rarely, if ever, used. The salient criteria for assistance are not based on causes of problems, such as trade

changes or technological improvement, but rather on effects of programs, such as incrementally expanded employment or modernization of viable firms.

[6] For proposals for reform of adjustment assistance programs, see Charles Frank, 1977; Jenkins *et al.*, 1978; Weisz, 1978; Wolf, 1979; U.S., 1980.

Summary and Conclusions

Concepts

The subject of trade and employment is plagued by considerable confusion. It is useful to start with the distinction between changes in comparative advantage and changes in international competitive position as causing trade change and hence domestic employment change. Comparative advantage determines the structure of production and therefore the structure of domestic employment, whereas international competitive position affects the level of employment. Changes in comparative advantage require movement of resources, at least on the margin, among industries, whereas loss of international competitive position need not. Adjusting the international competitive position of an economy requires macro-economic policies, whereas adjusting to changing comparative advantage is primarily a micro-economic process.

In considering labour adjustment costs, it is useful to distinguish between social and private costs, and to distinguish between the objectives of efficient resource allocation and social equity. Social adjustment costs are commonly measured by output forgone by temporarily unemployed resources, mainly labour, and raise efficiency questions. Social adjustment costs can be traced to labour market imperfections — wage rigidity and imperfectly mobile labour among sectors. There are some unresolved issues in the concept of social adjustment costs, however. Private adjustment costs are conceptually quite different, and include loss of value to both human and physical capital, and transfers among groups and individuals. Private adjustment costs are more relevant for questions of equity and for understanding protectionist pressure.

It is common to distinguish between protection and adjustment assistance programs by claiming that the former hinders adjustment, whereas the latter facilitates adjustment. This distinction is misleading. Both policy responses can share, in principle, the same objectives of equity and efficiency. Both policies often fail for similar reasons.

Trade protection is less effective at preserving employment than is commonly supposed. Industry-specific measures such as tariffs can

affect the structure of employment, but in general do not affect the level of employment. Even within a single industry, trade protection is less effective at preserving employment than may appear. Neither Canadian import policy nor U.S. trade law is very helpful in (a) saying when adjustment assistance is preferable to trade protection and (b) specifying which instrument should be used.

Trade affects the security of employment and the structure of employment. Concern for employment in manufacturing (basic industries) has prompted calls in Canada for an "industrial strategy," or in the United States a "reindustrialization" program. No one knows yet exactly what this means. But experience suggests that industrial policy can easily become defensive, propping up declining industries. Trade policies help determine the structure of industrial output and employment. Hence, they are often a part of industrial policy. Conversely, the structure of subsidies and penalties for industry help define the structure of trade. In that sense, industrial policy is a substitute for trade controls. The case for protecting employment in manufacturing through trade measures is often confused. It is unlikely that trade control could either raise productivity or real wages in the economy as a whole, although such claims are made for protecting manufacturing output and employment.

Adjustment Studies

Trade-employment balance and decomposition studies have been widely used to infer labour adjustment requirements and costs. When carefully done they can add insight. But many suffer from serious problems. One, perhaps incidental, problem is that trade-employment balance studies suggest that the purpose of trade is employment, and not efficient resource allocation. Another widespread problem is developing a plausible alternative against which actual trade patterns are compared. Some recent studies of tariff liberalization master this problem, but others do not. A third problem in these studies is converting hypothetical job displacement into actual lay-offs to estimate labour adjustment costs. This is generally not done. Studies limited to trade employment balances with LDCs suffer most of the above defects, and also fail to account for substitution among foreign suppliers. Finally, the comparison between trade and productivity change, as a source of employment change, that emerges from decomposition studies may not be a valid comparison. By and large the studies of tariff liberalization are the most careful and successful, even though they can only measure part of trade-related labour adjustment.

Labour tracking studies based on actual worker experience are extremely useful. Important findings are the following:

- Most workers return to their initial job.
- Private uncompensated costs for unrecalled workers can be large.

- The macro-economic context is a determinant of length of unemployment, and hence private adjustment costs.
- Human capital loss appears an important part of private labour adjustment costs.
- Workers most affected by trade changes differ from other employed workers with respect to demographic and economic characteristics, and subsequent work history.
- Adjustment assistance programs can have a negative impact on work incentives in some cases.

Although not reviewed in the text, several authors have used social adjustment cost estimates from labour tracking studies to show that, in general, the benefits of trade liberalization exceed labour adjustments costs (Monson, 1978; Mutti, 1978). But these studies do not capture unemployment "bumping" costs or psychic costs to workers.

Adjustment Programs

While the characteristics of industries and workers identified as coming under increasing import pressure are not surprising — relatively low-wage, low-skill, older workers, with disproportionate numbers of minorities and females — trade adjustment assistance benefits in the United States, at least, were increasingly going to high-wage, unionized industries with strong cyclical demand patterns. The success of Canadian and U.S. adjustment assistance programs, both trade specific and general, is mixed with respect to meeting the traditional objectives of adjustment assistance programs — improving efficiency by facilitating resource adjustment and social equity by compensating workers for injury. The programs have, however, played a useful role in reducing economic hardship and deflecting trade pressure, though in the United States, the new and much smaller program may have the perverse result of making trade restrictions a more politically attractive option. Areas for improvement are better targeting of benefits on those workers who do not return to their original employers, improved training and other worker services, and moderating any work disincentives of the current system. The question of why a special *trade* adjustment assistance program is justified has not been conclusively answered. One valid response to this may be adjustment programs focusing not on the causes of adjustment problems but more broadly on the effects of the programs themselves.

Glossary

AAA	Automotive Adjustment Assistance
CIRB	Canadian Industrial Renewal Board
EDP	Enterprise Development Program
GAAP	General Adjustment Assistance Program
GAAT	General Agreement on Tariffs and Trade
ITC	International Trade Commission (United States)
LABP	Labour Adjustment Benefits Program
LDCs	Less developed countries
MTN	Multilateral Trade Negotiations
NICs	newly industrializing countries
NTBs	non-tariff trade barriers
OECD	Organisation for Economic Co-operation and Development
OMA	Orderly Marketing Arrangement
SUB	Supplementary Unemployment Benefit
TAA	trade adjustment assistance
VERs	Voluntary Export Restraints

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